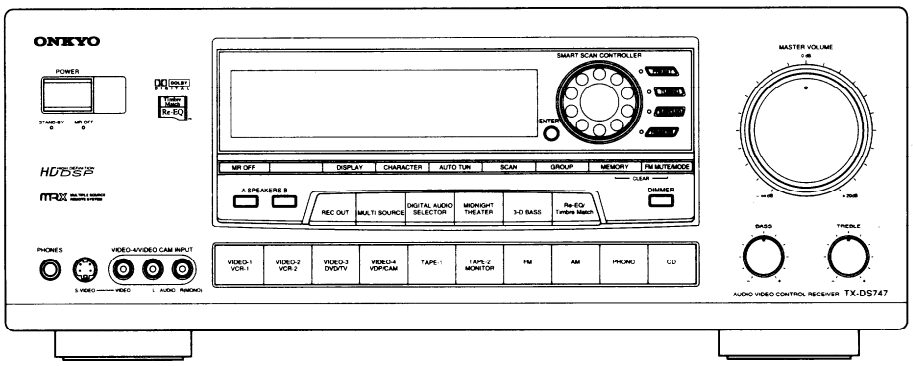
Ref. No.3587

ONKYO® SERVICE MANUAL

AUDIO VIDEO CONTROL RECEIVER
MODEL TX-DS747



Black and Golden models

BMP,BMPT,GMPT	230V AC,50Hz
BMWT,GMWT	230-230V /120V AC,50/50Hz
BMD	120V AC,60Hz
GMGK	220V AC,50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

TABLE OF CONTENTS

Specifications ... 2
Service procedures ... 3
Block diagrams ... 4
- Tuner section ... 4
- Video section ... 5
- Power supply section ... 6
- Amp. section ... 65

Microprocessor connection diagram ... 7
Microprocessor terminal descriptions ... 8
Adjustment procedures ... 12
IC block diagrams and descriptions ... 14
Printed circuit board parts list ... 24
Printed circuit board-connection diagram ... 31
Printed circuit board view ... 33
- Main circuit section ... 33
- Volume section ... 37
- DSP and AC-3 circuit sections ... 41
- Power supply and amp. sections ... 45
- Power amplifier section ... 49
- Display section ... 53
- Video and tuner sections ... 57

Schematic diagrams ... 35
- Main circuit section ... 35
- Volume section ... 39
- DSP and AC-3 circuit sections ... 43
- Power supply and amp. sections ... 47
- Power amplifier section ... 51
- Tuner and display sections ... 55
- Video section ... 59

Exploded view ... 61
Parts list ... 63
Packing view ... 69

SPECIFICATIONS

AMPLIFIER SECTION

Power Output

U.S. & Canadian models:

Stereo mode

Front L/R channels: **90 watts per channel, min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.**

Surround mode

Front L/R and Center channels: **80 watts per channel, min. RMS at 8 ohms, three channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.**

Surround L/R channels (Rear only driven): **40 watts per channel, min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.**

Other area models:

Stereo mode

Front L/R channels: 2 × 110 watts at 6 ohms, 1 kHz (DIN)

Surround mode

Front L/R and Center channels: 3 × 95 watts at 6 ohms, 1 kHz (DIN)

Surround L/R channels (Rear only driven): 2 × 50 watts at 6 ohms, 1 kHz (DIN)

IM Distortion:	0.08% at rated power (Front)
Damping Factor:	60 at 8 ohms (Front)
Input Sensitivity and Impedance	
Phono:	2.5 mV/50 kohms
CD/Tape Play:	150 mV/50 kohms
Output Level and Impedance	
Tape Rec:	150 mV/2.2 kohms
Pre out:	1 V/ 470 ohms
Phono Overload:	120 mV RMS at 1 kHz, 0.5% T.H.D.
Frequency Response:	20 Hz to 30 kHz, ±0.5 dB
RIAA Deviation:	20 Hz to 20 kHz, ±0.8 dB
Tone Control	
Bass:	±10 dB at 50 Hz
Treble:	±10 dB at 10 kHz
Signal-to-Noise Ratio	
Phono:	80 dB (IHF A, 5 mV input)
CD/Tape:	100 dB (IHF A)
Muting:	−∞ dB

VIDEO SECTION

Television format	
U.S. & Canadian models:	NTSC
Other models:	NTSC/PAL
Input Sensitivity and Impedance	
Video (Composite):	1 Vp-p/75 ohms
S-Video (Y signal):	1 Vp-p/75 ohms
S-Video (C signal):	0.28 Vp-p/75 ohms
Output Level and Impedance	
Video (Composite):	1 Vp-p/75 ohms
S-Video (Y signal):	1 Vp-p/75 ohms
S-Video (C signal):	0.28 Vp-p/75 ohms

DIGITAL SECTION

Digital Input Sampling Frequency:	32 kHz, 44.1 kHz, 48 kHz
Input Sensitivity Impedance	
Coaxial:	0.5 Vpp/75 ohms
AC-3 RF:	0.4 Vpp/75 ohms (other than U.S. & Canadian model)

TUNER SECTION

FM

Tuning Range:	87.5 — 108.0 MHz (50 kHz steps)
Usable Sensitivity	
Mono:	11.2 dBf, 1.0 µV (75 ohms)
Stereo:	17.2 dBf, 2.0 µV (75 ohms)
50 dB Quieting Sensitivity	
Mono:	17.2 dBf, 2.0 µV (75 ohms)
Stereo:	37.2 dBf, 20 µV (75 ohms)
Capture Ratio:	1.5 dB
Image Rejection Ratio	
U.S. & Canadian models:	40 dB
Other area models:	85 dB
IF Rejection Ratio:	90 dB
Signal-to-Noise Ratio	
Mono:	76 dB
Stereo:	70 dB
Alternate Channel Attenuation:	55 dB
Selectivity:	50 dB (DIN)
AM Suppression Ratio:	50 dB
Total Harmonic Distortion	
Mono:	0.1%
Stereo:	0.2%
Frequency Response:	30 Hz — 15 kHz, ±1.0 dB
Stereo Separation:	45 dB at 1 kHz 30 dB at 100 Hz — 10 kHz
Muting level:	17.2 dBf

AM

Tuning Range	
U.S. & Canadian models:	530—1,710 kHz (10 kHz steps)
European & Australian models:	522—1,611 kHz (9 kHz steps)
Worldwide models:	531—1,602 kHz (9 kHz steps), 530—1,710 kHz (10 kHz steps)
Usable Sensitivity:	30 µV
Image Rejection Ratio:	40 dB
IF Rejection Ratio:	40 dB
Signal-to-Noise Ratio:	40 dB
Total Harmonic Distortion:	0.7%

GENERAL

Power Supply	
U.S. & Canadian models:	AC 120 V, 60 Hz
European & Australian models:	AC 230 V, 50 Hz
Worldwide models:	AC 220-230 V and 120 V switchable, 50/60 Hz
Power Consumption	
U.S. & Canadian models:	4.2 A
Other area models:	400 W
Dimensions (W × H × D):	435 × 175 × 390 mm 17-1/8" × 6-7/8" × 15-3/8"
Weight:	13 kg, 28.7 lbs.

REMOTE CONTROL

U.S & Canadian models:	RC-P101S
Other area models:	RC-P201S
Transmitter:	Infrared
Signal range:	Approx. 5 meters, 16 ft.
Power supply:	Two "AA" batteries (1.5 V × 2)

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce darnier est indique la qu le present symbol est appose.

CIRCUIT NO.	PART NO.	DESCRIPTIONS
F901	252198	⚠ 8A-UL, Primary Fuse <D/W>
F902	252077	⚠ 4A-SE-EAK,Primary Fuse <P/T/W/K>
F903	252075	⚠ 2.5A-SE-EAK, Fuse <P/T>
	252166Y	⚠ 6.3A-ULIT-237, Fuse <D>
F915,F916	252166	⚠ 6.3A-UL/T-237, Secondary Fuse <D>
	252079	⚠ 6.3A-SE-EAK, Secondary Fuse <P/T/W/K>

NOTE:
<D>: 120V model only
<P>: 230V model only
<T>: Asian model only
<W>:Worldwide model only
<K>: Korean model only

2. To Initialize the unit

This device employs a microprocessor to perform various functions and operations. If interference generated by an external power supply, radio wave, or other electrical source results in accident which causes the specified operations and functions to operate abnormally.

To perform a result, please follow the procedure below.

1. **Press and hold down the CD button, then press the POWER button.**
2. **After "clear" is displayed, the prest memory and each mode stored in the memory, such as surround, are initialized and will return to the factory settings.**

3. Safety-check out

(Only U.S.A. model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer. Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

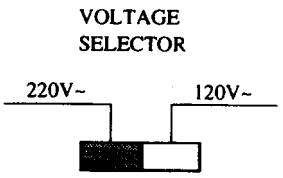
Specifications: 3.3 Mohm±10% at 500V.

4. Change of voltage

Worldwide models are equipment with a voltage selector to conform with local power supplies. This switch is located on the back panel.

Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

This switch is set to 220V at the factory. Voltage is changed by sliding the groove in the switch with the screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.



5. Memory preservation

This unit does not require memory preservation batteries.

A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged.

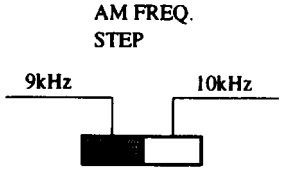
The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the power switch must be turned on and off a few times each month the keep the back-up system operative.

The period of the time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorted when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

6. Setting the tuning step frequency

Worldwide models are equipped with a step band selector switch. This switch is located on the back panel. This switch is set to 9 kHz at the factory, but may have to be reset to 10 kHz depending on the area where the unit is used.

	AM band step
Europe:	9 kHz
U.S.A.:	10 kHz

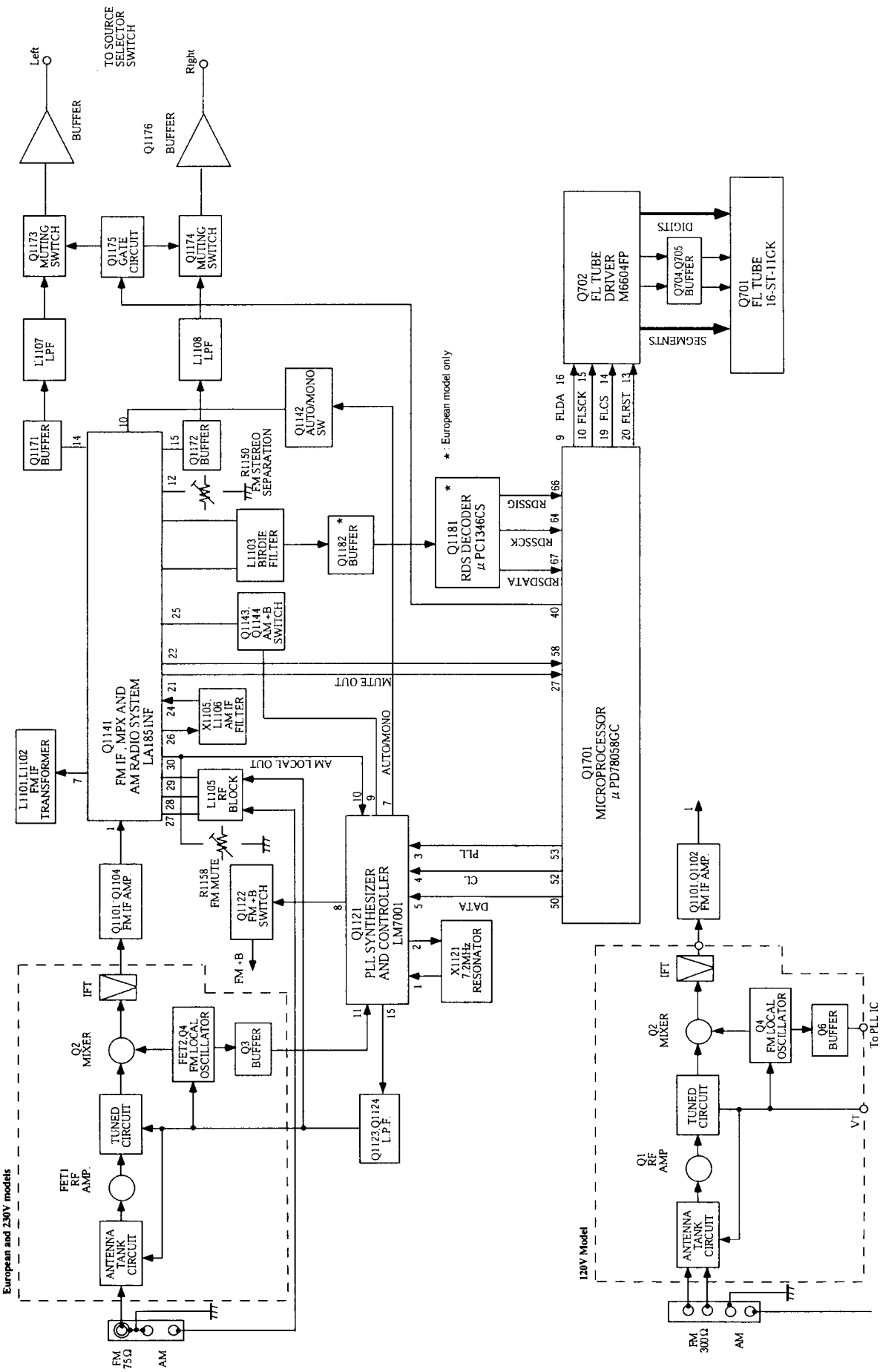


7. Changing the band step

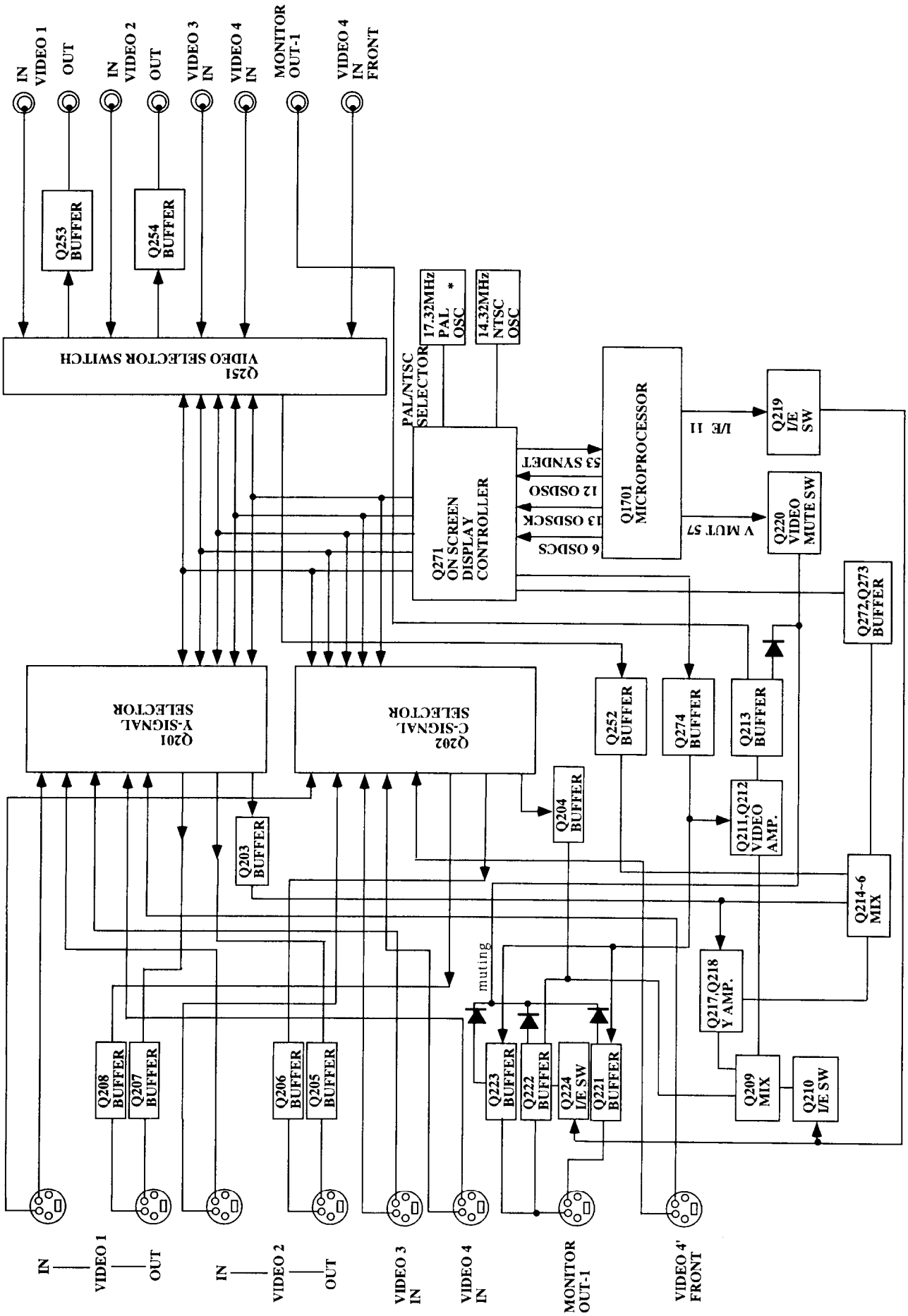
With the exception of the worldwide models, a tuning step selector switch is not provided. When you change the band step, change the parts as shown below.

	To 10 kHz	To 9 kHz
R1720	No connection	3.9 kohm
R1721	10 kohm	4.7 kohm

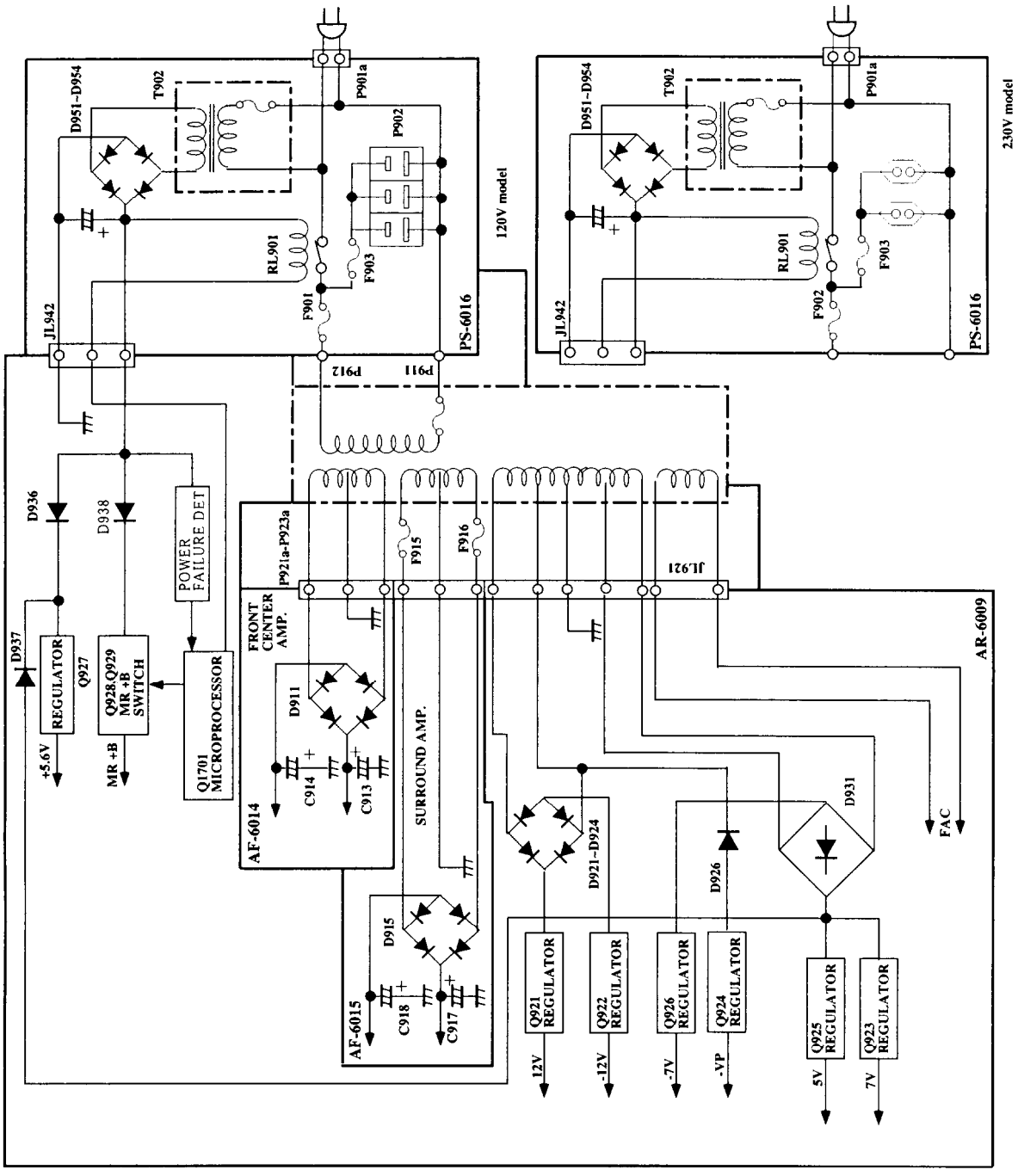
BLOCK DIAGRAMS
TUNER SECTION



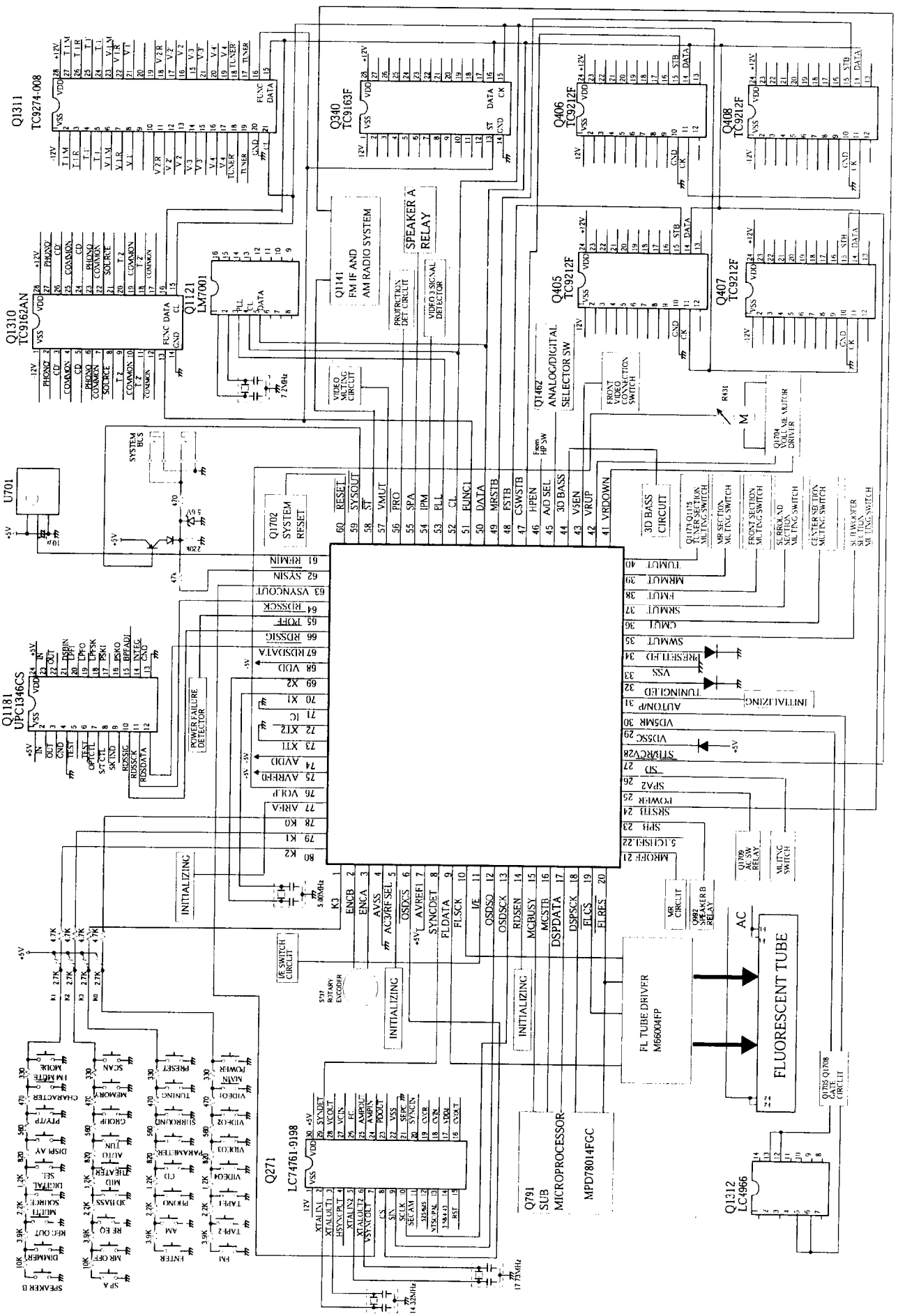
VIDEO SECTION



POWER SUPPLY SECTION



MAIN MICROPROCESSOR-CONNECTION DIAGRAM

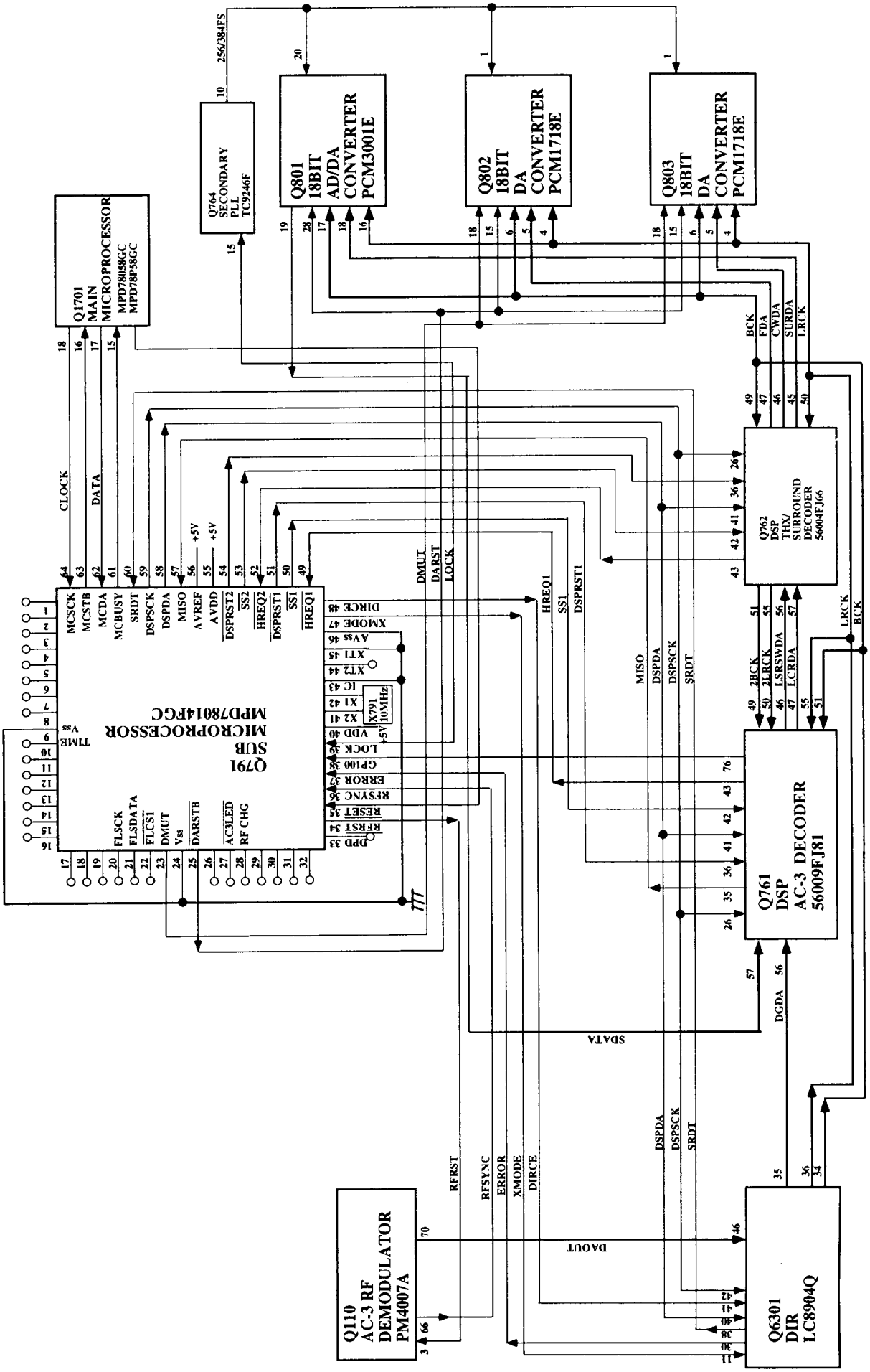


TERMINAL DESCRIPTIONS

No.	Mark	Symbol	Description
1	P15/ANI5	K3	Operation key connection pin
2	P16/ANI6	ENCB	Rotary encoder connection pin
3	P17/ANI7	ENCA	Ratary encoder connection pin
4	AVss	AVSS	Ground voltage pin for A/D converter
5	P130/ANO0	AC3/RF SEL	Initializing pin of AC3 RF function
6	P131/ANO1	OSDCS	Output pin to connect to the terminal CS for OSD controller LC74761
7	AVREF	AVREF1	Reference voltage pin for D/A converter
8 8	P70/SI2/RxD	SYNCDET	Judge input pin for external synchronizing of OSD IC External synchronizing when high level
9	P71/SO2/TxD	FLDATA	Data output pin to connect to pin SDTAT of FL tube driver IC
10	P72/SCK2/ASCK	FLSCK	Clock output pin to connect to pin SCK of FL tube driver IC
11	P20/SI1	I/E	Output pin to show the status of synchronizing for OSD IC. High level when external synchronizing
12	P21/S01	OSDSO	Output pin to connect to the pin SIN of OSD controller
13	P22/SCK1	OSDSCK	Output pin to connect to the pin SCLK of OSD controller
14	P23/STB	RDSEN	Initializing input for RDS
15	P24/BUSY	MCBUSY	Busy pin for transfer to the sub microprocessor
16	P25/SI0/SB0	MCSTB	Data input pin for transfer to the sub microprocessor
17	P26/SO0/SB1	DSPDATA	Data output pin for transfer to the sub microprocessor
18	P27/SCK0	DSPSCK	Clock output pin for transfer to the sub microprocessor
19	P40/AD0	FLCS	Output pin to connect to pin CS of FL tube driver
20	P41/AD1	FLRES	Output pin to connect to pin RES of FL tube driver Use for the reset signal of sub microprocessor when power on
21	P42/AD2	MROFF	Multi room indicator and control output pin
22	P43/AD3	5.1CHSEL	Not used
23	P44/AD4	SPB	Speaker B relay control output pin
24	P45/AD5	SRSTB	Strobe output pin to connect to the pin STB of electro. volume
25	P46/AD6	POWER	Power source control pin
26	P47/AD7	SPA2	Muting output pin when SPEAKER switch is changed A.
27	P50/A8	SD	Station detection pin
28	P51/A9	STBY/RECV	RECEIVED or STANDBY indicator control output pin
29	P52/A10	VD5SC	Control output pin for VIDEO-4 on the front panel. On when high level.
30	P53/A11	VD5MR	Control output pin for multi-source and recording of VIDEO-4 on the front panel. On when high level.
31	P54/A12	AUTON/P	Initializing pin to select NTSC or PAL.
32	P55/A13	TUNINGLED	TUNING indicator control pin
33	Vss	VSS	Ground pin
34	P56/A14	PRESETLED	PRESET indicator control pin
35	P57/A15	SWMUT	Muting control output pin for sub-woofer. On when high level
36	P60	CMUT	Muting control output pin for center amplifier On when high level
37	P61	SRMUT	Muting control output pin for surround amplifier On when high level
38	P62	FMUT	Muting control output pin for front amplifier On when high level
39	P63	MRMUT	Muting control output pin for multi-amplifier On when high level
40	P64/RD	TUMUT	Muting control output pin for tuner section. On when high level

<table>
<tr><th>No.</th><th>Mark</th><th>Symbol</th><th>Description</th></tr>
<tr><td>41
42</td><td>P65/WR
P66/WAIT</td><td>VOLDOWN
VOLUP</td><td>Volume control output pin
These pins change as the below table by the signal from remote control transmitter.
<table>
<tr><th>Operation</th><th>VOLUP</th><th>VOLDOWN</th></tr>
<tr><td>STOP</td><td>H</td><td>H</td></tr>
<tr><td>When UP</td><td>H</td><td>L</td></tr>
<tr><td>When DOWN</td><td>L</td><td>H</td></tr>
<tr><td>Power OFF</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>43</td><td>P67/ASTB</td><td>V-4FEN</td><td>Detector input pin for VIDEO-4 on the front panel
This pin becomes the high level when the video cassette deck is connected to VIDEO-4 on the front panel.
When this pin is high, the selector switch is changed the VIDEO-4 on the front panel.
When this pin is low, the selector switch is changed the VIDEO-4 on the rear panel.</td></tr>
<tr><td>44</td><td>P30/TO0</td><td>3D BASS</td><td>3D BASS control output pin</td></tr>
<tr><td>45</td><td>P31/TO1</td><td>A/D SEL</td><td>Analog/Digital switch control output pin</td></tr>
<tr><td>46</td><td>P32/TO2</td><td>HPEN</td><td>Detection input pin for insertion of headphone
When the headphone is used, the surround mode turns off.</td></tr>
<tr><td>47</td><td>P33/TI1</td><td>CWSTB</td><td>Strobe output pin to connect to the terminal STB of electro volume.</td></tr>
<tr><td>48</td><td>P34/TI2</td><td>FSTB</td><td>Strobe output pin to connect to the terminal STB of electro volume.</td></tr>
<tr><td>49</td><td>P35/PCL</td><td>MRSTB</td><td>Strobe output pin to connect to the terminal STB of electro volume.</td></tr>
<tr><td>50</td><td>P36/BUZ</td><td>DATA</td><td>Data output pin to the function switch, PLL, and electro volume ICs.</td></tr>
<tr><td>51</td><td>P37</td><td>FUNC1</td><td>Strobe output pin to the function switch ICs.</td></tr>
<tr><td>52</td><td>P120/RTP0</td><td>CL</td><td>Strobe output pin to the function switch, PLL and electro volume ICs.</td></tr>
<tr><td>53</td><td>P121/RTP1</td><td>PLL</td><td>Chip enable output pin to PLL IC.</td></tr>
<tr><td>54</td><td>P122/RTP2</td><td>IPM</td><td>VIDEO 3 signal detector input pin</td></tr>
<tr><td>55</td><td>P123/RTP3</td><td>SPA</td><td>Control output pin for speaker relay A. On when high level.</td></tr>
<tr><td>56</td><td>P124/RTP4</td><td>PROTECT</td><td>Input pin to operate the protection circuit.
When this pin becomes the low level more than 20 μ sec, a protection circuit operates.</td></tr>
<tr><td>57</td><td>P125/RTP5</td><td>VMUT</td><td>Muting control output for video signal</td></tr>
<tr><td>58</td><td>P126/RTP6</td><td>STEREO</td><td>Input pin to detect the stereo broadcast. Low level when stereo broadcast.</td></tr>
<tr><td>59</td><td>P127/RTP7</td><td>SYSOUT</td><td>System code output pin</td></tr>
<tr><td>60</td><td>RESET</td><td>RESET</td><td>System reset input pin.</td></tr>
<tr><td>61</td><td>P00/INTP0/TI00</td><td>REMIN</td><td>Remote control signal input pin</td></tr>
<tr><td>62</td><td>P01/INTP1</td><td>SYSIN</td><td>System code input pin</td></tr>
<tr><td>63</td><td>P02/INTP2</td><td>VSYNCOUT</td><td>Vertical synchronizing signal input pin</td></tr>
<tr><td>64</td><td>P03/INTP3</td><td>RDSSCK</td><td>Clock input pin from RDS decoder.</td></tr>
<tr><td>65</td><td>P04/INTP4</td><td>POFF</td><td>Detection input pin for power failure.</td></tr>
<tr><td>66</td><td>P05/INTP5</td><td>RDSSIG</td><td>Detection input pin for RDS broadcast.</td></tr>
<tr><td>67</td><td>P06/INTP6</td><td>RDSDATA</td><td>Data input pin from RDS decoder.</td></tr>
<tr><td>68</td><td>VDD</td><td>VDD</td><td>Power supply pin</td></tr>
<tr><td>69</td><td>X2</td><td>X2</td><td>Crystal connection pins for main system clock</td></tr>
<tr><td>70</td><td>X1</td><td>X1</td><td>These pins is connected to the 5MHz ceramic oscillator.</td></tr>
<tr><td>71</td><td>IC</td><td>IC</td><td>Internal connection pin.</td></tr>
<tr><td>72</td><td>XT2</td><td>XT2</td><td>Crystal connection pins for sub system clock</td></tr>
<tr><td>73</td><td>XT1/P07</td><td>XT1</td><td>Not used.</td></tr>
<tr><td>74</td><td>AVDD</td><td>AVDD</td><td>Analog power supply pin for A/D converter.</td></tr>
<tr><td>75</td><td>AVREF0</td><td>AVREF0</td><td>Reference voltage input pin for A/D converter.</td></tr>
<tr><td>76</td><td>P10/ANI0</td><td>VOLP</td><td>Input pin to detect the position of .master volume.</td></tr>
<tr><td>77</td><td>P11/ANI1</td><td>AREA</td><td>Initializing input pin for band area</td></tr>
<tr><td>78</td><td>P12/ANI2</td><td>K0</td><td>Operation key connection pin</td></tr>
<tr><td>79</td><td>P13/ANI3</td><td>K1</td><td>Operation key connection pin</td></tr>
<tr><td>80</td><td>P14/ANI4</td><td>K2</td><td>Operation key connection pin</td></tr>
</table>

SUB MICROPROCESSOR-CONNECTION DIAGRAM



TERMINAL DESCRIPTIONS

Pin No.	Terminal	Description
1~8	NC	
9	VSS	Ground terminal
10	TIME	Not used.
11~22	NC	
23	DMUT	Muting output terminal for digital section
24	VSS	Ground terminal
25	DARSTB	Output terminal to connect to the terminal RSTB of D/A converter PCM1718E.
26	NC	
27	AC-3LED	"AC-3" indicator control output terminal
28	RF CHG	Initializing input
28~32	NC	
33	DPD	Digital power down control output terminal
34	RFRST	Reset output terminal for AC-3 RF demodulator.
35	RESRT	System reset input terminal
36	RFSYNC	Synchronizing detection input pin for AC-3 RF demodulator
37	ERROR	Input terminal to connect to terminal ERROR of DIR IC LC8904Q.
38	GPI00	Input terminal to connect to terminal GPI00 of DST IC.
39	LOCK	Input terminal to connect to the terminal LOCK of clock generation IC TC9246F.
40	VDD	Power supply (5V)
41	X2	Crystal resonator connection terminals for main system.
42	X1	Connect the ceramic resonator 10MHz.
43	IC	Internal connection terminal
44	XT2	Sub system clock connection terminals.
45	XT1	Not used.
46	AVSS	Ground terminal for A/D converter
47	XMODE	Output terminal to connect to the terminal XMODE of DIR IC LC8904Q.
48	DIRCE	Chip enable output terminal to connect to the terminal CE of DIR IC LC8904Q.
49	HREQ1	Input terminal to connect to the terminal HREQ of DSP IC DSP56009.
50	SS1	Input terminal to connect to the terminal SS of DSP IC DSP56009.
51	DSPRST1	Input terminal to connect to the terminal RESET of DSP IC DSP56009.
52	HREQ2	Input terminal to connect to the terminal HREQ of DSP IC DSP56004.
53	SS2	Input terminal to connect to the terminal SS of DSP IC DSP56004.
54	DSPRST2	Input terminal to connect to the terminal RESET of DSP IC DSP56004.
55	AVDD	Power supply circuit for analog section
56	AVREF	Reference voltage input terminal for A/D converter
57	DSPSI	Input terminal to connect to the terminal MOSI of DSP IC DSP56009.
58	DSPSO	Data output terminal. Connect to the terminal MOSI of DSP ICs and the terminal DI OF DIR IC.
59	DSPSCK	Clock output terminal. Connect to the terminal SCK of DSP ICs and the terminal CL OF DIR IC.
60	SRDT	Input terminal to connect to the terminal SRDT of DIR IC.
61	BUSY	Busy signal output terminal to main microprocessor.
62	SI	Data input terminal from main microprocessor.
63	SO	Data output terminal to main microprocessor.
64	SCK	Clock input terminal for main microprocessor

ADJUSTMENT PROCEDURES

Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/μV

FM stereo: 1kHz, 67.5kHz devi., 60dB/μV

Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz, 30% mod.

2. Outputs

Connect the non-inductive type resistor of 8 ohms to the all speaker terminals unless otherwise noted.

FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.0MHz 1kHz 75kHz devi. 65dBf(60dB)	—	99.0MHz	DC voltmeter	L1101	0±20mV	FM MUTE/MODE switch:ON/AUTO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L1102	Minimum	
Stereo Distortion		Fig.3	99.0MHz Ext. mod.65dBf(60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig.3	99.0MHz Ext. mod. 65dBf(60dB)	Channel L 1kHz	99.0MHz	Channel R AC voltmeter	R1150	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.2	99.0MHz 19.2dBf(14dB)	—	99.0MHz	Oscilloscope	R1158	TUNED indicator lights on	
RDS		Fig.4	98.0MHz Ext. mod.60dB	RDS data or 57kHz 3% devi.	98.0MHz	Oscilloscope	R1191	Maximum	

AM ADJUSTMENT

120V model

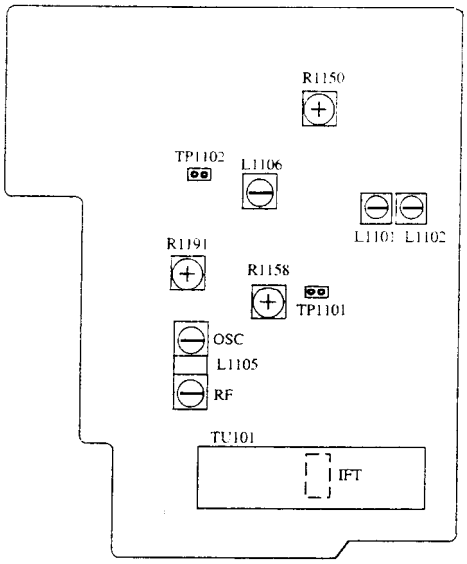
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L1105	1.4±0.2V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L1105	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L1106	Maximum

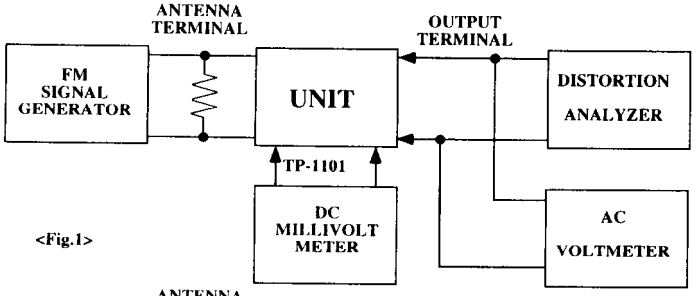
Reference Specification
FM tuned voltage:87.50MHz～108.00MHz
More than 1.3V～Less than 9V
AM tuned voltage:530kHz～1710kHz
1.4±0.4～Less than 9.0V

230V and Wolrdwide models

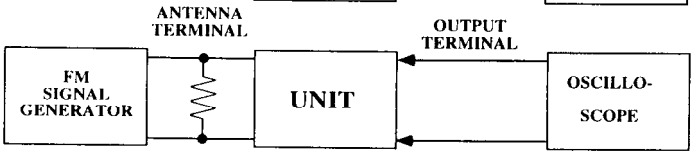
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L1105	1.4±0.2V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L1105	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L1106	Maximum

Reference Specification
FM tuned voltage:87.50MHz～108.00MHz
More than 1.3V～Less than 9V
AM tuned voltage:522kHz～1611kHz
1.4±0.4～Less than 9.0V
(230V model)
AM tuned voltage:531kHz～1602kHz
1.4±0.4～Less than 9.0V
(Worldwide model)

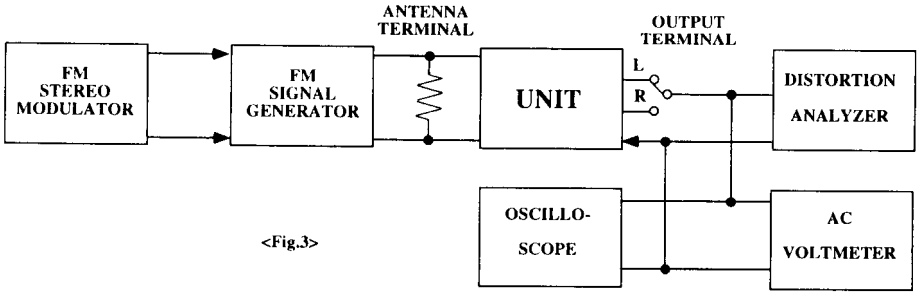




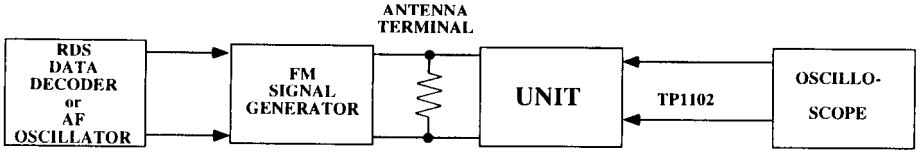
<Fig.1>



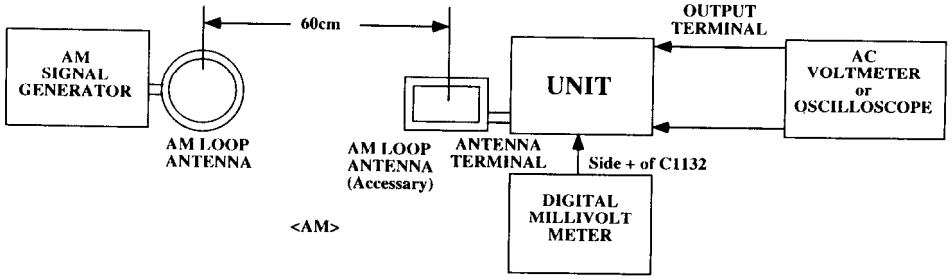
<Fig.2>



<Fig.3>



<Fig.4>



<AM>

PM4007A (AC-3 RF Demodulator)

Pin No.	Symbol	I/O	Description
1	GND	-	Ground
2	VDD	-	Power supply (+5V)
3	RESET	I	System reset. Reset when "L".
4	OSCON	I	Oscillation control: Oscillation ON when "H".
5	DATA	I	For IC testing. Normally connected to ground (or unconnected.).
6	MCK	I	For IC testing. Normally connected to ground (or unconnected.).
7	MLTB	I	For IC testing. Normally connected to ground (or unconnected.).
8	IDST	O	Output for IC testing.
9	IDCK	O	Output for IC testing.
10	IDO	O	Output for IC testing.
11	TMO	I	For IC testing. Normally connected to ground (or unconnected.).
12	ECCK	O	Output for IC testing.
13	DEN	O	Output for IC testing.
14	DRY	O	Output for IC testing.
15	MSYC	O	Output for IC testing.
16	TM1	I	For IC testing. Normally connected to ground (or unconnected.)
17	A0	O	External RAM address output. Address 0 (LSB)
18	A1	O	External RAM address output. Address 1
19	A2	O	External RAM address output. Address 2
20	A3	O	External RAM address output. Address 3
21	A4	O	External RAM address output. Address 4
22	A5	O	External RAM address output. Address 5
23	TM2	I	For IC testing. Normally connected to ground (or unconnected.)
24	TM3	I	For IC testing. Normally connected to ground (or unconnected.)
25	XOUT	O	Output for IC testing.
26	XIN	I	For IC testing. Normally connected to ground (or unconnected.)
27	XETX	I	For IC testing. Normally connected to ground (or unconnected.)
28	GND	-	Ground
29	VDD	-	Power supply (+5V)
30	A6	O	External RAM address output. Address 6
31	A7	O	External RAM address output. Address 7
32	GND	-	Ground
33	VDD	-	Power supply (+5V)
34	A12	O	External RAM address output. Address 12
35	A14	O	External RAM address output. Address 14 (MSB)
36	WEB	O	Write-enable signal for external RAM. Active when "L".
37	A13	O	External RAM address output. Address 13
38	A8	O	External RAM address output. Address 8
39	A9	O	External RAM address output. Address 9
40	GND	-	Ground
41	A11	O	External RAM address output. Address 11
42	OEB	O	Output-enable signal for external RAM. Active when "L"
43	A10	O	External RAM address output. Address 10
44	DB7	I/O	External RAM data terminal. Data Bus 7
45	DB6	I/O	External RAM data terminal. Data Bus 6
46	DB5	I/O	External RAM data terminal. Data Bus 5
47	DB4	I/O	External RAM data terminal. Data Bus 4
48	DB3	I/O	External RAM data terminal. Data Bus 3
49	DB2	I/O	External RAM data terminal. Data Bus 2
50	DB1	I/O	External RAM data terminal. Data Bus 1
51	DB0	I/O	External RAM data terminal. Data Bus 0

Pin No.	Symbol	I/O	Description
52	VDD	-	Power supply (+5V)
53	GND	-	Ground
54	TI1	I	For IC testing. Normally connected toVDD.
55	VIN	I	VCX0 input.
56	VOUT	O	VCX0 output.
57	TI2	I	For IC testing. Normally connected to ground (or unconnected.).
58	TI3	I	For IC testing. Normally connected to ground (or unconnected.).
59	TLDB	I	For IC testing. Normally connected to ground (or unconnected.).
60	TCK	I	For IC testing. Normally connected to ground (or unconnected.).
61	TRP	O	Output for IC testing.
62	TDO	O	Output for IC testing.
63	PDO	O	Phase comparator output (3 states)
64	TI4	I	For IC testing. Normally connected to ground (or unconnected.).
65	PDDIS	I	PDO output control input. Output ON when "L".
66	MUTO	O	Muting output. Muted when "H".
67	TI5	I	For IC testing. Normally connected to ground (or unconnected.).
68	VLDY	O	Output for IC testing.
69	DASYO	O	Output for IC testing.
70	SAOUT	O	Digital out output
71	DAIN	I	For IC testing. Normally connected to ground (or unconnected.).
72	DASEL	I	Digital out select
73	TI8	I	For IC testing. Normally connected to ground (or unconnected.).
74	C2F1	O	Error status display for C2 correction. Outputs whether or not correction was accomplished.
75	C2F0	O	Error status display for C2 correction. Outputs the error count for C2.
76	C1F1	O	Error status display for C1 correction. Outputs whether or not correction was accomplished.
77	C1F0	O	Error status display for C1 correction. Outputs the error count for C1
78	MUTI	I	Muting input. Muted when "H".
79	VDD	-	Power supply (+5V)
80	GND	-	Ground
81	AVDD	-	Power supply for analog comparator (+5V)
82	CPIN	I	Analog comparator input. Plus side.
83	CMIN	I	Analog comparator input. Minus side.
84	AGND	-	Ground for analog comparator
85	TM4	I	For IC testing. Normally connected to ground (or unconnected.).
86	VDD	-	Power supply (+5V)
87	DIN	I	For IC testing. Normally connected to ground (or unconnected.).
88	DOUT	O	Analog comparator output
89	DOUTB	O	Analog comparator reverse output.
90	C9M	O	9.216 MHz output.
91	GND	-	Ground
92	WINGT	O	For IC testing.
93	SYST0	O	For IC testing.
94	SYST1	O	For IC testing.
95	ADST0	O	For IC testing.
96	ADST1	O	For IC testing.
97	TM5	I	For IC testing. Normally connected to ground (or unconnected.).
98	BUNR1	I	For IC testing. Normally connected to ground (or unconnected.).
99	AGND	-	Ground for 46.08MHz transmitter.
100	AVDD	-	Power supply for 46.08MHz transmitter.

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD
(NAAR-6009-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q1301	22240191	NJM4565D-D
Q1302-Q1309	22240293 or	NJM4558L-D or
Q1313	22240247	BA15218N
Q1310	22240798	TC9162AN
Q1311	22240829	TC9274N-008
Q1312	22240025	LC4966
Q1701	22241105R3 or	MPD78058GC-F01or
	22241104R3	MPD78P058GC
Q1704	22240239	TA7291S
Q921	222780125NEC	MPC78M12HF
Q922	222790125JRC	NJM79M12FA
Q923	222780078MAT	AN7707F
Q925	222780565JRC	NJM78M56FA
Q926	222790075	79M07HF
Q927	222780565JRC	NJM78M56FA
	Transistors	
Q1314	2213160	DTC124ES
Q1315	2215240	DTA114TS
Q1702,Q225	221282 or	DTC144ES or
	2213560	RN1204
Q1703	2213510 or or	DTA114ES or
	2214350	RN2202
Q1705,Q1706	2213290 or	DTC114ES or
	2214230	RN1202
Q1707,Q1708	2212600	DTA124ES
Q1709	2213640	DTC123JS
Q924	2211353 or	2SA949-O or
	2211354	2SA949-Y
Q928,Q929	2213640 or	DTC123JS or
	2214660	RN1205
	Diodes	
D1341,D1342	223163,	1SS133,
D1701-D1705	223205 or	1SS270A or
D1707,D1708	223222	WG713A
D1706	224470562	MTZJ5.6B, Zener
D241-D243	223163,	1SS133,
D938-D940	223205 or	1SS270A or
	223222	WG713A
D921-D926	22380260,	RL1N4003,
D936,D937	22380035 or	GP104003E or
	22380046	AM01Z
D935	22380260	RL1N4003 <D>
D927	224473604	MTZJ36D, Zener
D931	22380022 or	RBV402 or
	22380285	RS403M
D941	224470623	MTZJ6.2C, Zener
	Choke coil	
L1701	233454K220	NCH-1452
	Oscillators	
X1701	3010242	CST5.00MGW,Ceramic
	Capacitors	
C1302,C1307	354741009	10 μ F,16V,Elect.
C1304,C1404	354721019	100 μ F,6.3V,Elect.
C1305,C1405	374726824	6800pF ± 5%,50V, Plastic
C1306,C1406	374721824	1800pF ± 5%,50V, Plastic
C1308,C1408	374721015	100pF ± 10%,50V, Plastic<D>
C1308,C1408	374724714	470pF ± 5%,50V, Plastic <P/T/W/K>
C1309,C1312	354741009	10 μ F,16V,Elect.
C1315,C1318	354741009	10 μ F,16V,Elect.
C1321,C1323	354741009	10 μ F,16V,Elect.
C1325,C1327	354741009	10 μ F,16V,Elect.
C1331,C1431	354741009	10 μ F,16V,Elect.
C1341-C1343	354741009	10 μ F,16V,Elect.
C1345	354780229	2.2 μ F,50V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminals	
P251	25045457 or	NPJ-3PDE278 or
	25045299	NPJ-3PDE158
P252	25045462 or	NPJ-4PDE283 or
	25045339	NPJ-4PDE190

S VIDEO CIRCUIT PC BOARD
(NAVD-6028-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q201,Q202	22240373	BA7625
	Transistors	
Q203-Q208	2212125 or	2SA1048-GR or
	2213354	2SA933S-R
Q209	2212285 or	2SC2878-A or
	2212286	2SC2878-B
Q210,Q224	221282 or	DTC144ES or
	2213560	RN1204
Q211,Q212	2212115 or	2SC2458-GR or
	2213284	2SC1740S-R
Q213-Q215	2212285 or	2SC2878-A or
Q221-Q223	2212286	2SC2878-B
Q216,Q220	2213640 or	DTC123JS or
	2214660	RN1205
Q217	2212125 or	2SA1048-GR or
	2213354	2SA933S-R
Q218,Q219	2213510 or	DTA114ES or
	2214350	RN2202
	Diodes	
D201-D210	223163 or	1SS133 or
	223205	1SS270A
	Capacitors	
C201-C210	354780229	2.2 μ F,50V,Elect.
C211,C213	354724719	470 μ F,6.3V,Elect.
C212,C214	354780229	2.2 μ F,50V,Elect.
C215,C217	354724719	470 μ F,6.3V,Elect.
C216,C218	354780229	2.2 μ F,50V,Elect.
C219	354744709	47 μ F,16V,Elect.
C221	354780229	2.2 μ F,50V,Elect.
C222	354741009	10 μ F,16V,Elect.
C223	354724719	470 μ F,6.3V,Elect.
C227,C228	354721019	100 μ F,6.3V,Elect.
C233	354721019	100 μ F,6.3V,Elect.
	Sockets	
P201	25051568	NSCT-12P1355
P202	25051748	NSCT-8P1535
P203	25051748	NSCT-8P1535
	Plug	
P211a	25055135	NPLG-5P119

DIGITAL INPUT TERMINAL PC BOARD
(NAETC-6029-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q181	222740045R1O	TC74HCU04AF
	Photo coupler	
U121	24120037	TORX178A
	Diode	
D191	223163 or	1SS133 or
	223205	1SS270A
	Capacitors	
C1183,C1189	374724724	4700pF ± 5%,50V, Plastic <P>
C1184	374722234	0.022 μ F ± 5%,50V, Plastic
C1185	374724734	0.047 μ F ± 5%,50V, Plastic
C1186	354780229	2.2 μ F,50V,Elect.
C1187,C1188	374723324	3300pF ± 5%,50V, Plastic <P>
C1190	354721019	100 μ F,6.3V,Elect.
C181,C191	375524744	0.47 μ F ± 5%,50V, Plastic

CAUTION: Replacement of the transistor of mark *, if necessary, must be made from the same beta group (HFE) as the original type.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q1458,Q1460	2213090	DTA114S
Q1461	221281	DTC114S
	Diodes	
D1451-D1453	223163	1SS133
	Capacitors	
C1361,C1381	354741009	10 μF,16V,Elect.
C1364,C1365	374721044	0.1 μF±5%,50V, Plastic
C1367,C1387	354744709	47 μF,16V,Elect.
C1368	374721534	0.015 μF±5%,50V, Plastic
C1370	374721044	0.1 μF±5%,50V, Plastic
C1384,C1385	374721044	0.1 μF±5%,50V, Plastic
C1388,C1468	374721534	0.015 μF±5%,50V, Plastic
C1451,C1452	354780479	4.7 μF,50V,Elect.
C1461	354741009	10 μF,16V,Elect.
C1464,C1465	374721044	0.1 μF±5%,50V, Plastic
C1467	354744709	47 μF,16V,Elect.
	Sockets	
JL351a	25051096	NSCT-12P883
P1351a	25051238	NSCT-13P1028
P1352a	25051526	NSCT-4P1313

VOLUME CIRCUIT PC BOARD
(NAAF-6011-1A/1B/1C/1D/1E)

~~CIRCUIT NO.~~	~~PART NO.~~	~~DESCRIPTION~~
C1373,C1393	374721534	0.015 μF±5%,50V Plastic capacitor
C1473	374721534	0.015 μF±5%,50V, Plastic capacitor
JL351b	25051096	NSCT-12P883, Socket
R1451,R1453	5104405	N9RTLC100KWT20F, Variable resistor

SURROUND SPEAKER TERMINAL PC BOARD
(NAETC-6012-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
P551	25060246	NTM-4PDMN166, Speaker terminal
JL552a	25051108	NSCT-4P895, Socket

PREOUT TERMINAL PC BOARD
(NAAF-6024-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
C301-C308	374723324	3300pF±5%,50V, Plastic capacitor <P>
	374721015	100pF±10%,50V, Plastic capacitor <T/W/K>
JL381b	25055630	NPLG-9P592,Plug
JL382b	25055629	NPLG-8P591,Plug
P301	25045456	NPJ-2PDBL277 or
	25045298	NPJ-2PDBL157,Pin jack
P302	25045458	NPJ-6PDBL279 or
	25045300	NPJ-6PDBL159,Pin jack

FRONT/CENTER POWER AMPLIFIER PC BOARD
(NAAF-6014-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q1501,Q1518	2211732 or	*	2SC1845-F or
	2211733	*	2SC1845-E
Q1502,Q1516	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q1503	2212115 or		2SC2458-GR or
Q503	2213284		2SC1740S-R
Q1504-Q1506	2211353 or		2SA949-O or
Q1511	2211354		2SA949-Y
Q1507,Q1512	2211633 or		2SC2229-O or
Q1517	2211634		2SC2229-Y
Q1509	2203010		2SC5171
Q1510	2203000		2SA1930
Q1519	2211634		2SC2229-Y
Q1520	2213354		2SA933S-R
Q501,Q518	2211732 or	*	2SC1845-F
Q601,Q618	2211733	*	2SC1845-E
Q502,Q516	2211732 or		2SC1845-F
	2211733		2SC1845-E
Q504-Q506	2211353 or		2SA949-O or
Q511	2211354		2SA949-Y
Q507,Q512	2211633 or		2SC2229-O or
Q517	2211634		2SC2229-Y
Q1508	2212654 or		2SC3241- or
Q508,Q608	2211653		2SC3241-O
Q509,Q609	2203010		2SC5171
Q510,Q610	2203000		2SA1930
Q1513	2203113 or	*	2SA1986-O or
Q513,Q613	2203112	*	2SA1986-R
Q1514	2203123 or	*	2SC5358-O or
Q514,Q614	2203122	*	2SC5358-R
Q520,Q620	2213354		2SA933S-R
Q519	2211634		2SC2229-
Q541,Q542	2212115 or		2SC2458-GR or
	2213284		2SC1740S-R
Q602,Q616	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q603	2213284 or		2SC1740S-R or
	2212115		2SC2458-GR
Q604-Q606	2211353 or		2SA949-O or
	2211354		2SA949-Y
Q607,Q612	2211633 or		2SC2229-O or
Q617	2211634		2SC2229-Y
Q611	2211353 or		2SA949-O or
	2211354		2SA949-Y
Q619	2211634		2SC2229-Y
Q961	2211792 or		2SA992-F or
	2211793		2SA992-E
Q991,Q992	2213640		DTC123JS
	Diodes		
D501,D502	22380260,		RL1N4003,
D601,D602	22380032 or		1SR139-100 or
	22380035		GP104003E
D911	22380273	⚠	RS804M
D991,D992	223163 or		1SS133 or
	223205		1SS270A
	Capacitors		
C1502	354782209		22 μF,50V,Elect.
C1505	354742219		220 μF,16V,Elect.
C1514	354764709		47 μF,35V,Elect.
C1515	354744709		47 μF,16V,Elect.
C1517	374721044		0.1 μF±5%,50V, Plastic
C1521	354741019		100 μF,16V,Elect.
C1523	354722219		220 μF,6.3V,Elect.
C1533-C1536	354771009		10 μF,63V,Elect.
C502,C602	354782209		22 μF,50V,Elect.
C505,C605	354742219		220 μF,16V,Elect.
C514,C614	354764709		47 μF,35V,Elect.
C515,C615	354744709		47 μF,16V,Elect.
C517,C617	374721044		0.1 μF±5%,50V, Plastic
C521,C522	354774719		470 μF,63V,Elect.
C523,C623	354722219		220 μF,6.3V,Elect.
C541	354721019		100 μF,6.3V,Elect.
C542	354780229		2.2 μF,50V,Elect.
C596	374722234		0.022 μF±5%,50V, Plastic
C621,C622	354774719		470 μF,63V,Elect.
C913,C914	3504305Y	⚠	12000 μF,63V,Elect.

NOTE: THE COMPONENTS IDENTIFIDE BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CIRCUIT NO.	PART NO.		DESCRIPTION
	Resistors		
R1506	443526834		68kΩ ±5%,1/2W,Metal oxide
R1513	443525614	⚠	560Ω ±5%,1/2W,Metal oxide
R1514,R1517	443528204	⚠	82Ω ±5%,1/2W,Metal oxide
R1515	443526804		68Ω ±5%,1/2W,Metal oxide
R1516	443524714	⚠	470Ω ±5%,1/2W,Metal oxide
R1523	4500116		RNU1/6WCF820,Metal
R1524	443521014		100Ω ±5%,1/2W,Metal oxide
R1529,R1530	453530224		2.2Ω ±5%,1/2W,Metal
R1535,R1536	443525614	⚠	560Ω ±5%,1/2W,Metal oxide
R1538	4000132		RGC55 0.22 Ohm,Metal plate
R1540	453630824		8.2Ω ±5%,1/2W,Metal
R506,R606	443526834		68kΩ ±5%,1/2W,Metal oxide
R513,R613	443525614	⚠	560Ω ±5%,1/2W,Metal oxide
R514,R517	443528204	⚠	82Ω ±5%,1/2W,Metal oxide
R515,R615	443526804		68Ω ±5%,1/2W,Metal oxide
R516,R616	443524714		470Ω ±5%,1/2W,Metal oxide
R522,R523	4500116		RNU1/6WCF820,Metal
R524,R624	443521014		100Ω ±5%,1/2W,Metal oxide
R529,R530	453530224	⚠	2.2Ω ±5%,1/2W,Metal
R535,R536	443525614	⚠	560Ω ±5%,1/2W,Metal oxide
R538,R638	4000132		RGC55 0.22 Ohm,Metal plate
R540,R640	453630824		8.2Ω ±5%,1W,Metal
R545,R546	453530224	⚠	2.2Ω ±5%,1/2W,Metal
R547,R647	443623914		390Ω ±5%,1W,Metal oxide
R614,R617	443528204	⚠	82Ω ±5%,1/2W,Metal oxide
R622,R623	4500116		RNU1/6WCF820,.Metal
R629,R630	453530224	⚠	2.2Ω ±5%,1/2W,Metal
R635,R636	443525614	⚠	560Ω ±5%,1/2W,Metal oxide
R645,R646	453530224	⚠	2.2Ω ±5%,1/2W,Metal
	Relaies		
RL501,RL502	25065517		NRL-2P5A-DC24-098
	Sockets		
JL941b	25050270		NSCT-6P98
JL532a	25051110		NSCT-6P897
JL501b,JL552b	25050268		NSCT-4P96
	Plugs		
JL503b	25055626		NPLG-5P588
JL942b	25055624		NPLG-3P586
TP1544	25055038		NPLG-2P29
TP544,TP644	25055038		NPLG-2P29

SURROUND POWER AMPLIFIER PC BOARD (NAAF-6015-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q551,Q552	2211733 or	*	2SC1845-E or
Q651,Q652	2211732	*	2SC1845-F
Q553	2211733 or		2SC1845-E or
Q653	2211732		2SC1845-F
Q554,Q594	2213284 or		2SC1740S-R or
Q654	2212115		2SC2458-GR
Q555-Q557	2211354 or		2SA949-Y or
Q655-Q657	2211353		2SA949-O
Q558,Q568	2211634 or		2SC2229-Y or
	2211633		2SC2229-O
Q559	2211634		2SC2229-Y
Q561,Q661	2203010		2SC5171
Q562,Q662	2203000		2SA1930
Q563,Q663	2203043 or	⚠ *	2SC5197-O or
	2203042	⚠ *	2SC5197-R
Q564,Q664	2203033 or	⚠ *	2SA1940-O or
	2203032	⚠ *	2SA1940-R
Q565,Q665	2211633 or		2SC2229-O or
	2211634		2SC2229-Y
Q566,Q666	2211732 or		2SC1845-F or
	2211733		2SC1845-E
Q569,Q669	2213354		2SA933S-R

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q593	2212445		2SK365-GR
Q595	2212644		2SA1358-Y
Q658,Q659	2211634		2SC2229-Y
	Diodes		
D551,D552	22380260		RL1N4003
	22380032		1SR139-100
	22380035		GP104003E
D591	223163,		1SS133,
	223205 or		1SS270A or
	223222		WG713A
D915	22380021	⚠	RS403L
	Capacitors		
C552,C652	354742209		22μF,16V,Elect.
C555,C655	354741019		100μF,16V,Elect.
C557,C558	354781009		10μF,50V,Elect.
C564,C664	354764709		47μF,35V,Elect.
C565,C665	354744709		47μF,16V,Elect.
C566,C666	374721044		0.1μF±5%,50V, Plastic
C571,C572	354784719		470μF,50V,Elect.
C573,C673	354722219		220μF,6.3V,Elect.
C575,C576	354781009		10μF,50V,Elect.
C593	354764709		47μF,35V,Elect.
C594	354780229		2.2μF,50V,Elect.
C595	374722234		0.022μF±5%,50V, Plastic
C597	354781009		10μF,50V,Elect.
C917,C918	3504304Y	⚠	6800μF,50V,Elect.
	Resistors		
R1569	443525614		560Ω ±5%,1/2W,Metal oxide
R1572	443521024		1kΩ ±5%,1/2W,Metal oxide
R1574	443725604		56Ω ±5%,2W,Metal oxide
R556,R656	443525634		56kΩ ±5%,1/2W,Metal oxide
R563,R564	443526804	⚠	68Ω ±5%,1/2W,Metal oxide
R565,R566	443525604	⚠	56Ω ±5%,1/2W,Metal oxide
R567,R667	443526804	⚠	68Ω ±5%,1/2W,Metal oxide
R571,R671	4500116		RNU1/6WCF820,Metal plate
R572,R672	4500116		RNU1/6WCF820,Metal plate
R573,R673	443521014		100Ω ±5%,1/2W,Metal oxide
R574,R575	453530224	⚠	2.2Ω ±5%,1/2W,Metal
R576,R676	453630824		8.2Ω ±5%,1W,Metal
R582,R682	4800045		RGC55 0.1 Ohm*2,Metal plate
R588,R589	453530224		2.2Ω ±5%,1/2W,Metal
R663,R664	443526804	⚠	68Ω ±5%,1/2W,Metal oxide
R665,R666	443525604	⚠	56Ω ±5%,1/2W,Metal oxide
R674,R675	453530224	⚠	2.2Ω ±5%,1/2W,Metal
	Sockets		
JL501a,JL912a	25051108		NSCT-4P895
	Plugs		
JL560b,JL660b	25055624		NPLG-3P586
TP578,TP678	25055038		NPLG-2P29

POWER SUPPL CIRCUIT PC BOARD (NAPS-6016-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Capacitors		
C901	3500191		DE7150F-103M
C952	354744719		470μF,16V,Elect.
	Diodes		
D951-D954	22380260,		RL1N4003,
	22380032 or		1SR139-100 or
	22380035		GP104003E
D955	223163 or		1SS133 or
	223205		1SS270A
	Fuses		
F901	252198	⚠	8A-UL/T-237 <D/W>
F902	252077	⚠	4A-SE-EAK <P/T/W/K>
F903	252166	⚠	6.3A-UL/T-237 <D>
	252075	⚠	2.5A-SE-EAK <P/T>

CIRCUIT NO.	PART NO.		DESCRIPTION
	Fuseholders		
F901a	25050065	⚠	SH403T <D/W>
F902a	25050065	⚠	SH403T <P/T/W/K>
F903a	25050065	⚠	SH403T<D/P/T>
	Fuse labels		
F903b	29361747		T2.5AL250V, Fuse label <P/T>
F903b	29361747		T2.5AL250V
F916b	29361681		Label F <P/T/W/K>
	Terminal		
P501	25060248		NTM-8PDMN168
	Plug		
P901a	25055675		NPLG-2P631
	Resistors		
R901	431533355	⚠	RC1/2GFKUL3.3M
R951	453530824		8.2Ω ±5%,1/2W,Metal
	Relaies		
RL901	25065248 or	⚠	NRL-1P15-DC12-29 or
	25065516	⚠	NRL-1P10A-DC12-097 <D/W>
	25065515 or	⚠	NRL-1P15A-DC12-096 or
	25065508	⚠	NRL-1P10A-DC12-093 <P/T/K>
	Switch		
S901	25065437	⚠	NSS-22157P <W>
	Power trnasformer		
T902	2301258 or	⚠	NPT-1294D or
	2300670A	⚠	NPT-1111D <D>
	2300671A	⚠	NPT-1111P <P/T>
	2300672A	⚠	NPT-1111DG <W/K>

SECONDAR CIRCUIT PC BOARD (NAETC-6018-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.		DESCRIPTION
C921-C928	374721044		0.1μF±5%,50V, Plastic capacitor
F915,F916	252166	⚠	6.3A-UL/T237,Fuse <D>
	252079	⚠	6.3A-SE-EAK,Fuse <P/T/W/K>
F915a,F916a	25050065	⚠	SH403T, Fuseholder
F916b	29361681		Fuse label <P/T/W/K>
JL912b	25050268		NSCT-4P96,Socket
JL921b	25050271		NSCT-7P99,Socket
R921,R922	453532294	⚠	0.22Ω ±5%,1/2W,Metal resistor
R929,R930	453532294	⚠	0.22Ω ±5%,1/2W,Metal resistor

SPEAKER TERMINAL PC BOARD (NAETC-6020-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
JL532b	25050270	NSCT-6P97,Socket
P502	25060247	NTM-2PDMN167, Terminal
P504a	25055135	NPLG-5P119,Plug

POWER SWITCH PC BOARD (NAETC-6021-1B/1D/1E)

Except 120V Model

CIRCUIT NO.	PART NO.		DESCRIPTION
C902	3500191	⚠	DE7150F-103M, IS capacitor
C902a	27301216	⚠	SB1925A, Capacitor cover
S902	25035550	⚠	NPS-111-L512P, Power switch

THERMAL DET. TRANSISTOR PC BOARD (NAETC-6128-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q560	2212654	2SC3421-, transistor
JL560a	25051087	NSCT-3P874, Socket

THERMAL DET. TRANSISTOR PC BOARD (NAETC-6129-1A/1B/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q660	2212654	2SC3421-, transostor
JL660a	25051087	NSCT-3P874, Socket
P904a	25055600	NPLG-2P568, Plug

AC OUTLET PC BOARD (NAETC-6037-1A/6017-1B/1D)

CIRCUIT NO.	PART NO.		DESCRIPTION
P511	2009990382		NSAS-10P0519,Socket
P522a	25055133		NPLG-3P117,Plug
P561	2009990241A		NSAS-6P0346,Socket
P902	25051220	⚠	NSCT-6P1010,AC outlet <D>
P903	25051125	⚠	NSCT-4P912, AC outlet <P/T/W>

DISPLAY CIRCUIT PC BOARD (NADIS-6022-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
Q701	212160Y	16-ST-11GK
	Remote sensor	
U701	24130011	PIC-12043TE2
	IC	
Q702	22240685R9	M66004FP
	Transistors	
Q704,Q705	2212115 or	2SC2458-GR or
	2213284	2SC1740S-R
Q706,Q707	2212600	DTA124ES
Q708-Q713	2215410R2	RN1441
Q714	2214530R2	RN2402
	Diodes	
D701,D702	225291D	SEL4910D-D
D703,D711	223234R2	1SS352
D706-D709	225290	SEL4110R
	223234R2	1SS352
D712	224481302R2 or	DTZ13B or
	224491300R2	UDZ13B
D713-D715	223234R2	1SS352
	Capacitors	
C702	355741009	10μF,16V,Elect.
C714	375524744	0.47μF±5%,50V, Plastic
C716	355781009	10μF,50V,Elect.
C717	355721019	100μF,6.3V,Elect.
C718	375524744	0.47μF±5%,50V, Plastic
	Resistor	
R705	49163103415	RM1/10IJ10k*15,Array
	Switches	
S701-S727	25035652	NPS-111-S604
S728	25035652	NPS-111-S604 <P>
S729-S734	25035652	NPS-111-S604
	Rotar encoder	
S737	25065528Y	REB161PVB
	Sockets	
JL701b	25050945 or	NSCT-39P732 or
	25051883	NSCT-39P1670
JL801a,JL802a	25051113	NSCT-9P900
	Holder	
Q701a	27191001Y	

ELECTRO VOLUME PC BOARD(NAAF-6023-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q331,Q342	22240581R1	NJM4565M
Q340	22240943R2	TC9163AF
Q343,Q402	22240581R1	NJM4565M
Q405-Q408	22240944R2	TC9212F
Q409-Q416	22240581R1	NJM4565M
	Transistors	
Q333-Q335	2215196	2SK364-BL
Q337-Q339	2215410R2	RN1441
Q344,Q345	2214540R2	RN2403
Q346	2214480R2	RN1403
Q419-Q434	2215410R2	RN1441
Q435-Q442	2214530R2	RN2402
Q443-Q450	2215410R2	RN1441

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D301-D303	223234R2	1SS352
D401-D408	223234R2	1SS352
	Capacitors	
C319,C320	374721044	0.1 μF±5%,50V, Plastic
C352,C354	374721244	0.12 μF±5%,50V, Plastic
C356,C358	374721244	0.12 μF±5%,50V, Plastic
C360,C362	374721244	0.12 μF±5%,50V, Plastic
C401-C404	374722234	0.022 μF±5%,50V, Plastic
C411-C418	354741009	10 μF,16V,Elect.
C419-C426	354782209	22 μF,50V,Elect.
C435-C442	354741009	10 μF,16V,Elect.
C443-C450	354782209	22 μF,50V,Elect.
C459-C466	354744709	47 μF,16V,Elect.
C467-C474	354780229	2.2 μF,50V,Elect.
C483,C484	354741009	10 μF,16V,Elect.
	Resistor	
R391	5142017	N16RGL20KB25F, Variable
	Sockets	
JL381a	25051093	NSCT-9P880
JL382a	25051092	NSCT-8P879
P1401	25050985	NSCT-12P772
	Plugs	
P511b	25055236	NPLG-5P220
P561b	25055234	NPLG-3P218

HEADPHONE TERMINAL PC BOARD (NAAF-6025-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
JL503a	25051089	NSCT-5P876, Socket
P503	25045502Y or	J6315-03-090 or
	25045514Y	KB26-5005, Headphone terminal <D/P>
	25045385	KB26-5153, Headphone terminal <T/W/K>

AC-3 CIRCUIT PC BOARD (NADG-6035-1B/1C)

Except 120V model

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q102	22240976R1	MC14577C
Q108	22240581R1	NJM4565M
Q110	22241107R3	PM4007A
Q112	22240985R3 or	TC55257DFL-85L or
	22241036R9	M5M5256CFP-70LL
Q893	222790053JRC	NJM79L05A
Q894	222780055JRC	NJM78M05FA
	Transistors	
Q101,Q103	2213143R2	2SC2712-O
Q104,Q109	2214373R2	2SA1162-O
Q106,Q107	2213143R2	2SC2712-O
	Diodes	
D101	223236R2	KV1851-TL
	Coils	
L101	233493K680	NCH-1487
L102-L105	231237K470R2	NCH-1479
	Oscillators	
X101	3010263	SBP-4930
X102	3010279	XTL-18.432M
	Capacitors	
C107	355721019	100 μF,6.3V,Elect.
C108,C116	355744709	47 μF,16V,Elect.
C123,C124	355744709	47 μF,16V,Elect.
C129	355721019	100 μF,6.3V,Elect.
C130	355744709	47 μF,16V,Elect.
C891,C892	354742219	220 μF,16V,Elect.
C898,C899	354741019	100 μF,6.3V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Sockets	
P1403	25050986	NSCT-14P773
P1404	25051238	NSCT-13P1028
JL803a	25051111	NSCT-7P898

TUNER CIRCUIT PC BOARD (NARF-6026-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end	
TU101	240089	FE415-G11<P/T/W/K>
	240098	ENV172D1G1 <D>
	ICs	
Q1121	22241076	LM7001J
Q1141	22240983	LA1851N-F
Q1176	22240293 or	NJM4558L-D or
	22240247	BA15218N
Q1181	22240679	μPC1346CS <P>
	Transistors	
Q1101,Q1102	2215063	2SC2669-O
Q1103,Q1104	2215063	2SC2669-O <P/T/W/K>
Q1122,Q1142	2213510 or	DTA114ES
	2214350	RN2202
Q1123	2212445	2SK365-GR
Q1124	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR
Q1143	221282 or	DTC144ES or
	2213560	RN1204
Q1144	2213640 or	DTC123JS or
	2214660	RN1205
Q1171,Q1172	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR
Q1173,Q1174	2215024	2SD1468S-R
Q1175	2213510 or	DTA114ES or
	2214350	RN2202
Q1182	2212115 or	2SC2458-GR or
	2213284	2SC1740S-R <P>
	Diode	
D1165	224470512	MTZJ5.1B
	Ceramic filters	
X1101	3010071	SFE10.7MA5
X1102	3010071	SFE10.7MA5 <P/T/W/K>
X1103	3010071	SFE10.7MA5 <D>
X1103	3010130	SFE10.7MZ2A <P/T/K/W>
X1104	3010268	CSB456F23
X1105	3010123	SFZ-450JL
	Oscillators	
X1121	3010141	XTL-7.2M
X1181	3010203	AF6146CG <P>
	Coils & Transformers	
L1101	233457	NFIF-4081
L1102	233458	NFIF-4082
L1103	233471	NMC-6084 <P/T/W/K>
L1104	233454M022	NCH-1452 022M
L1105	232174	NMRF-5077
L1106	232139	NMIF-4062
L1107,L1108	233484	NMC-4085
	Capacitors	
C1101,C1133	354741019	100 μF,16V,Elect.
C1127	354721019	100 μF,6.3V,Elect.
C1130,C1159	354780229	2.2 μF,50V,Elect.
C1131	374722234	0.022 μF±5%,50V, Plastic
C1132,C1153	354783399	0.33 μF,50V,Elect.
C1142	354741019	100 μF,16V,Elect.
C1145,C1149	354780479	4.7 μF,50V,Elect.
C1146	374723324	3300pF±5%,50V, Plastic
C1147	374721034	0.01 μF±5%,50V, Plastic <P/T/W/K>
C1147	374721534	0.015 μF±5%,50V, Plastic <D>

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C1151,C1152	354780109	1 μ F,50V,Elect.
C1154,C1166	354741009	10 μ F,16V,Elect.
C1155,C1156	374721134	0.011 μ F ± 5%,50V, Plastic <D>
C1155,C1156	374724324	4300pF ± 5%,50V, Plastic <P/T/W/K>
C1160	354784799	0.47 μ F,50V,Elect.
C1162	353741009	10 μ F,16V,Elect.
C1168	374724734	0.047 μ F ± 5%,50V, Plastic
C1171,C1172	354741009	10 μ F,16V,Elect.
C1173,C1174	374722724	2700pF ± 5%,50V, Plastic
C1175,C1176	354741009	10 μ F,16V,Elect.
C1177	354780229	2.2 μ F,50V,Elect.
C1178,C1179	354741009	10 μ F,16V,Elect.
	Resistors	
R1150	5210261	N06HR5KBC, Trimming
R1158	5210264	N06HR30KBC, Trimming
R1191	5210265	N06HR50KBC, Trimming <P>
	Switch	
S1101	25065286	NSS-22112 <W/K>
	Plug	
TP1101	25055038	NPLG-2P29
	Terminals	
P1101	25060222 or	NTM-2PDML144
	25060117	NTM-2PDML051 <P/T/W/K>
	Sockets	
P1102b	25050985	NSCT-12P772 <T>
P1102b	25050986	NSCT-14P773 <W/K>
P1102b	25050987	NSCT-16P774 <P>
	Shield plate	
TU101a	27150397	<P/T/W/K>

VIDEO CIRCUIT PC BOARD (NAVD-6027-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q251	22240373	BA7625
Q271	22241037	LC74761-9189
	Transistors	
Q252-Q254	2212125 or	2SA1048-GR or
Q273-Q275	2213354	2SA933S-R
Q272	2213284	2SC1740S-R
	Oscillators	
X271	3010167	XTL-14.32M
X272	3010238	XTL-17.73M <P/T/W>
	Capacitors	
C251-C255	354780229	2.2 μ F,50V,Elect.
C256-C259	354724719	470 μ F,6.3V,Elect.
C262,C282	354721019	100 μ F,6.3V,Elect.
C269	354741009	10 μ F,16V,Elect.
C271,C277	354784799	0.47 μ F,50V,Elect.
C274	374722234	0.022 μ F ± 5%,50V, Plastic
C275,C296	354780109	1 μ F,50V,Elect.
C280,C297	354744709	47 μ F,16V,Elect.
C284,C291	375524744	0.47 μ F ± 5%,50V, Plastic
C289,C298	354721019	100 μ F,6.3V,Elect.
	Diodes	
D251,D252	223163 or	1SS133 or
D271	223205	1SS270A
	Socket	
JL251a	25051094	NSCT-10P881
	Coils	
L271	233454K056	NCH-1452
L272,L273	233454K220	NCH-1452
	Resistor	
R263	453530154	1.5Ω ± 5%,1/2W,Metal

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminals	
P251	25045457 or	NPJ-3PDE278 or
	25045299	NPJ-3PDE158
P252	25045462 or	NPJ-4PDE283 or
	25045339	NPJ-4PDE190

S VIDEO CIRCUIT PC BOARD (NAVD-6028-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q201,Q202	22240373	BA7625
	Transistors	
Q203-Q208	2212125 or	2SA1048-GR or
	2213354	2SA933S-R
Q209	2212285 or	2SC2878-A or
	2212286	2SC2878-B
Q210,Q224	221282 or	DTC144ES or
	2213560	RN1204
Q211,Q212	2212115 or	2SC2458-GR or
	2213284	2SC1740S-R
Q213-Q215	2212285 or	2SC2878-A or
Q221-Q223	2212286	2SC2878-B
Q216,Q220	2213640 or	DTC123JS or
	2214660	RN1205
Q217	2212125 or	2SA1048-GR or
	2213354	2SA933S-R
Q218,Q219	2213510 or	DTA114ES or
	2214350	RN2202
	Diodes	
D201-D210	223163 or	1SS133 or
	223205	1SS270A
	Capacitors	
C201-C210	354780229	2.2 μ F,50V,Elect.
C211,C213	354724719	470 μ F,6.3V,Elect.
C212,C214	354780229	2.2 μ F,50V,Elect.
C215,C217	354724719	470 μ F,6.3V,Elect.
C216,C218	354780229	2.2 μ F,50V,Elect.
C219	354744709	47 μ F,16V,Elect.
C221	354780229	2.2 μ F,50V,Elect.
C222	354741009	10 μ F,16V,Elect.
C223	354724719	470 μ F,6.3V,Elect.
C227,C228	354721019	100 μ F,6.3V,Elect.
C233	354721019	100 μ F,6.3V,Elect.
	Sockets	
P201	25051568	NSCT-12P1355
P202	25051748	NSCT-8P1535
P203	25051748	NSCT-8P1535
	Plug	
P211a	25055135	NPLG-5P119

DIGITAL INPUT TERMINAL PC BOARD (NAETC-6029-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q181	222740045R1O	TC74HCU04AF
	Photo coupler	
U121	24120037	TORX178A
	Diode	
D191	223163 or	1SS133 or
	223205	1SS270A
	Capacitors	
C1183,C1189	374724724	4700pF ± 5%,50V, Plastic <P>
C1184	374722234	0.022 μ F ± 5%,50V, Plastic
C1185	374724734	0.047 μ F ± 5%,50V, Plastic
C1186	354780229	2.2 μ F,50V,Elect.
C1187,C1188	374723324	3300pF ± 5%,50V, Plastic <P>
C1190	354721019	100 μ F,6.3V,Elect.
C181,C191	375524744	0.47 μ F ± 5%,50V, Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C184	374721044	0.1 μ F ± 5%,50V, Plastic
C185	374721044	0.1 μ F ± 5%,50V, Plastic <D>
C193	374721044	0.1 μ F ± 5%,50V, Plastic
C194	374721044	0.1 μ F ± 5%,50V, Plastic <D>
	Terminals	
P101	25045473	NPJ-1PDBL291<D>
	25045501	NPJ-1PDBL317 <P/T/W/K>
P102	25045473	NPJ-1PDBL291
	Socket	
P804	2009990434UL	NSAS-10P0578

RI/MR TERMINAL PC BOARD (NADG-6030-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo coupler	
Q983	24120043	ON3131 <D>
	Transistors	
Q981,Q982	221282 or	DTC144ES or
	2213560	RN1204
Q984	2213510 or	DTA114ES or
	2214350	RN2202 <D>
Q985	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR <D>
	Diodes	
D981,D982	223205 or	1SS270A or
	223163	1SS133 <P/T/W/K>
D983	223205 or	1SS270A or
	223163	1SS133
D984	223205 or	1SS270A or
	223163	1SS133 <D>
	Capacitors	
C981	374724724	4700pF ± 5%,50V, Plastic
C982	354741009	10 μ F,16V,Elect.
C983	354741009	10 μ F,16V,Elect. <D>
	Terminals	
P981	25045433	HSJ-1003-01-013 <D>
	25045293	HSJ-1003-01-12 <P/T/W/K>
P982	25045172	HSJ-1003-01-020
	Plug	
JL943b	25055625	NPLG-4P587

FRONT VIDEO TERMINAL PC BOARD (NAETC-6031-1A/1B/1C/1D/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
P1305,P1306	25045500	NPJ-1PDBL316 <D/P>
	25045479A	NPJ-1PDBL297 <T/W/K>
P1321	2009990457BUL	NSAS-12P0611
P204	25051913	NSCT-4P1700 <D/P>
	25051749	NSCT-4P1536 <T/W/K>
P211	2009990433UL	NSAS-10P0577
P254	25045500	NPJ-1PDBL316 <D/P>
	25045479A	NPJ-1PDBL297 <T/W/K>

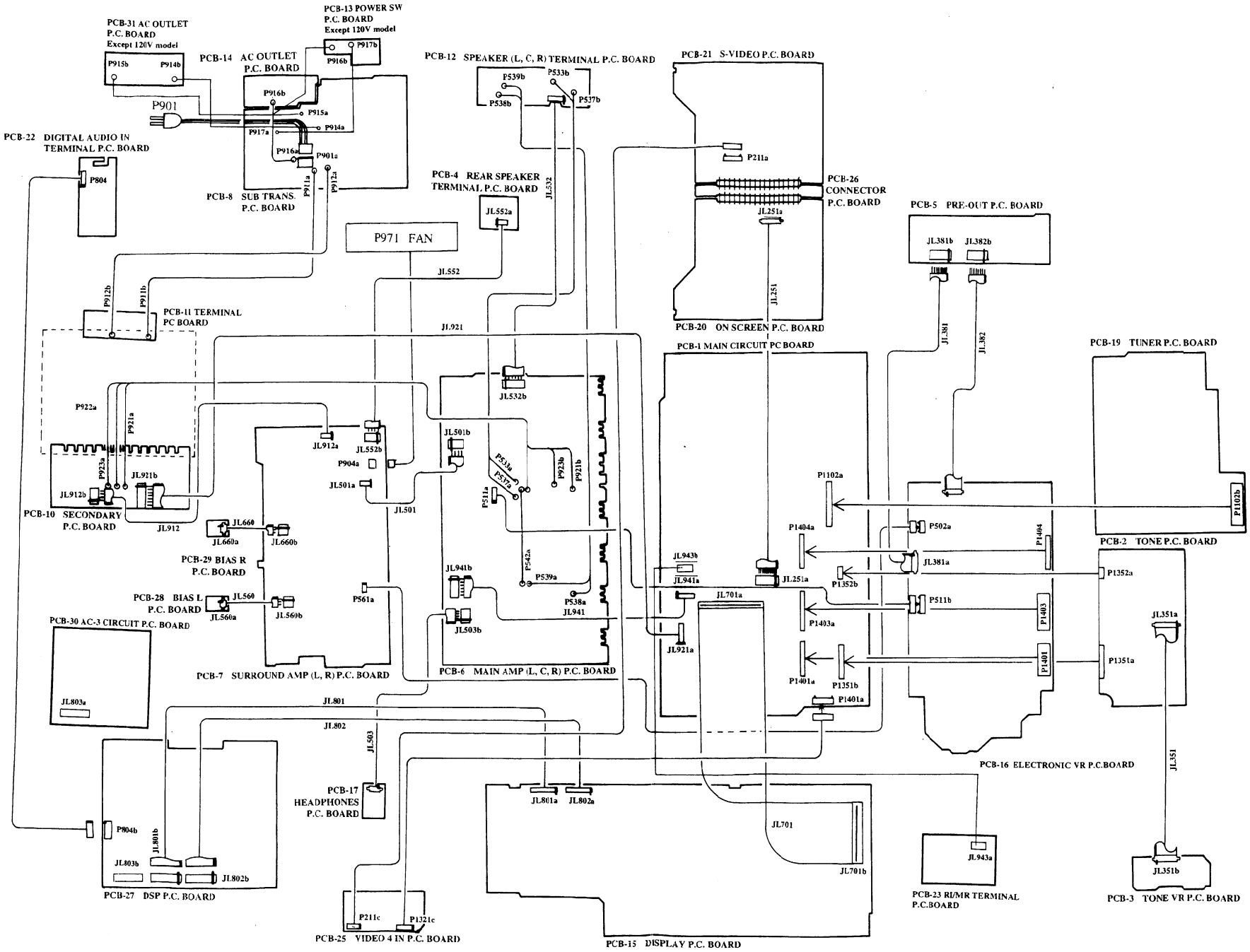
DSP CIRUCIT PC BOARD (NADG-6034-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q131	22240915R3	LC8904Q
Q761	22240972R3	DSPF56009FJ81
Q762	22240940R3	DSP56004FJ66
Q763	22241101R2	LC32464M-80
Q764	22240928R2	TC9246F
Q791	22241102R3	MPD78014FGC-557, Mask
	22241103R3	MPD78P014GC, One time
Q801	22241100R2	PCM3001E
Q802,Q803	22241099R2	PCM1718E
Q821-Q823	22240581R1	NJM4565M
Q891,Q892	222780055JRC	NJM78M05FA

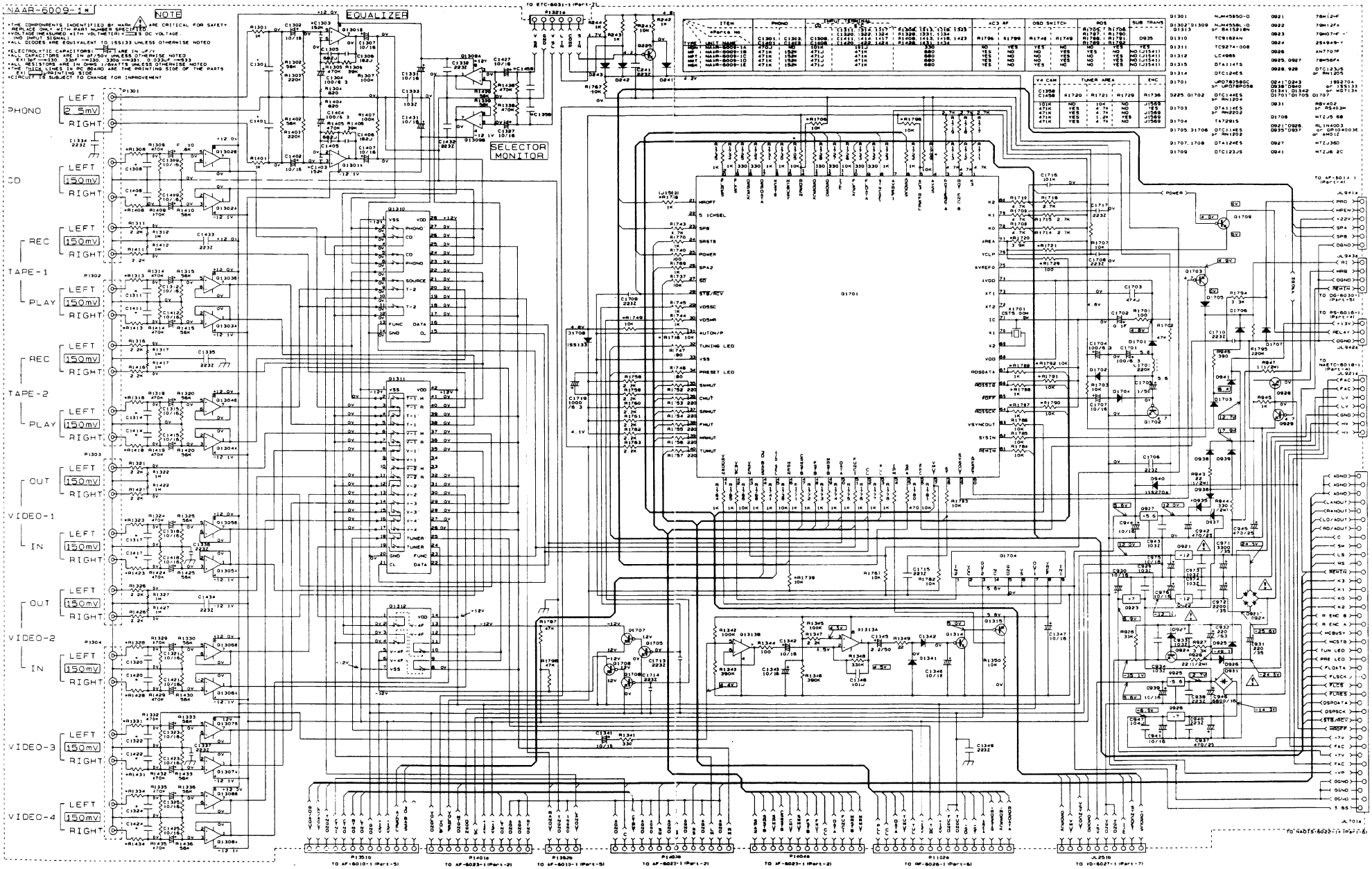
CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D131,D132	223234R2	1SS352
	Coils	
L147	231237K470R2	NCH-1479
L761,L762	231237M022R2	NCH-1471 022M
	Oscillators	
X131	3010266	XTL-18.432M,Crstal
X791	3010239T	CST10.0MWT,Ceramic
	Capacitors	
C133	354744709	47 μ F,16V,Elect.
C135	374721034	0.01 μ F ± 5%,50V, Plastic
C763,C773	374724734	0.047 μ F ± 5%,50V, Plastic
C766,C781	354744709	47 μ F,16V,Elect.
C776,C789	355744709	47 μ F,16V,Elect.
C793,C811	354744709	47 μ F,16V,Elect.
C801,C808	354741009	10 μ F,16V,Elect.
C803-C805	354741009	10 μ F,16V,Elect.
C817-C822	354744709	47 μ F,16V,Elect.
C831-C836	354780229	2.2 μ F,50V,Elect.
C837-C842	374722724	2700pF ± 5%,50V, Plastic
C843-C848	374721524	1500pF ± 5%,50V, Plastic
C849-C854	374721224	1200pF ± 5%,50V, Plastic
C855-C860	354782209	22 μ F,50V,Elect.
C861,C862	354741019	100 μ F,16V,Elect.
C893,C894	354741019	100 μ F,16V,Elect.
C896	354742219	220 μ F,16V,Elect.
	Sockets	
JL801b,JL802b	25050286	NSCT-9P114
JL803b	25050284	NSCT-7P112 <P/T/W/K>
	Plug	
P804b	25055135	NPLG-5P119

NOTE: <D>: 120V Model only
<P>: 230V Model only
<T>: Asian Model only
<W>: Taiwanese Model only
<K>: Korean Model only

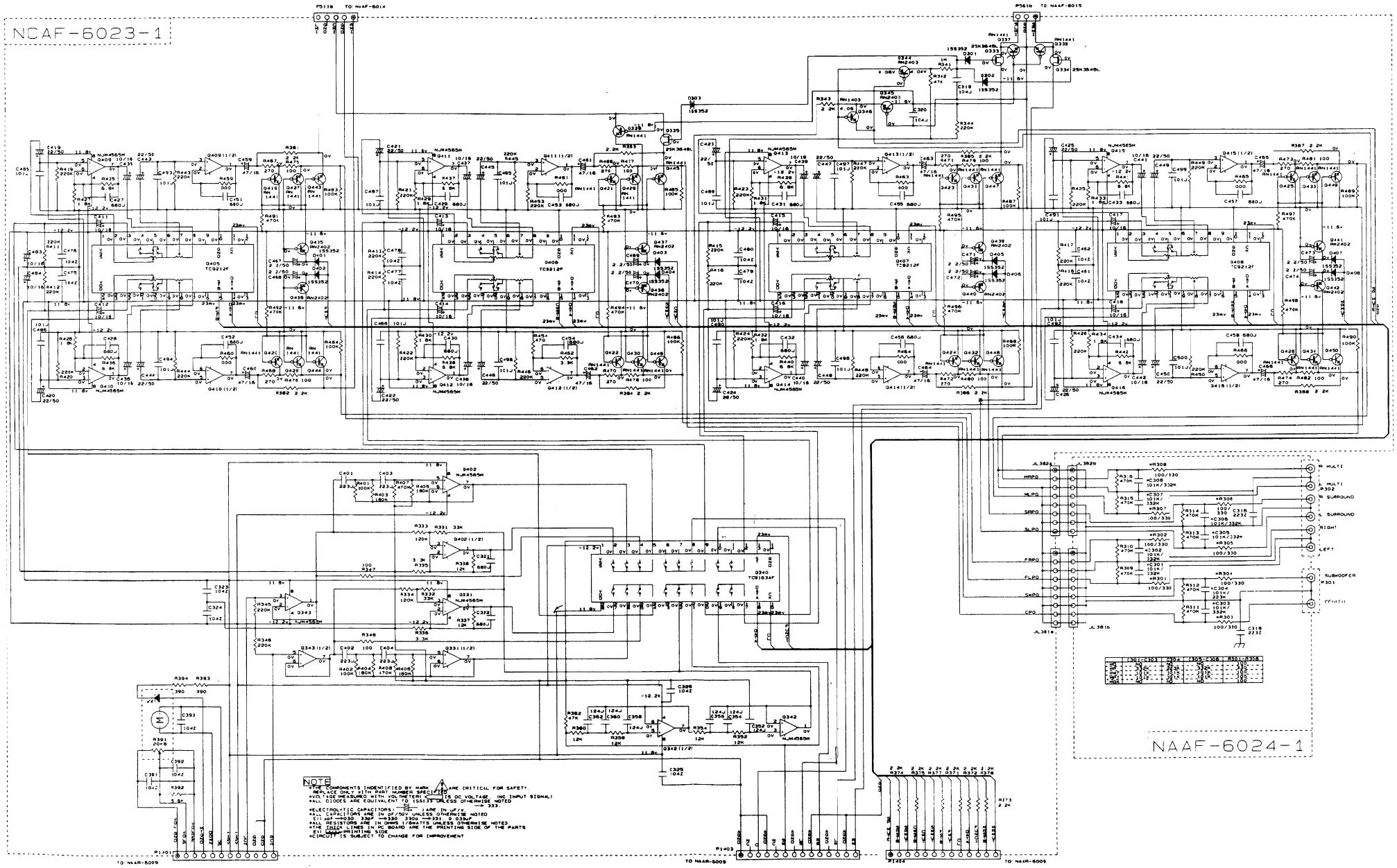
PC BOARDS-CONNECTION DIAGRAM



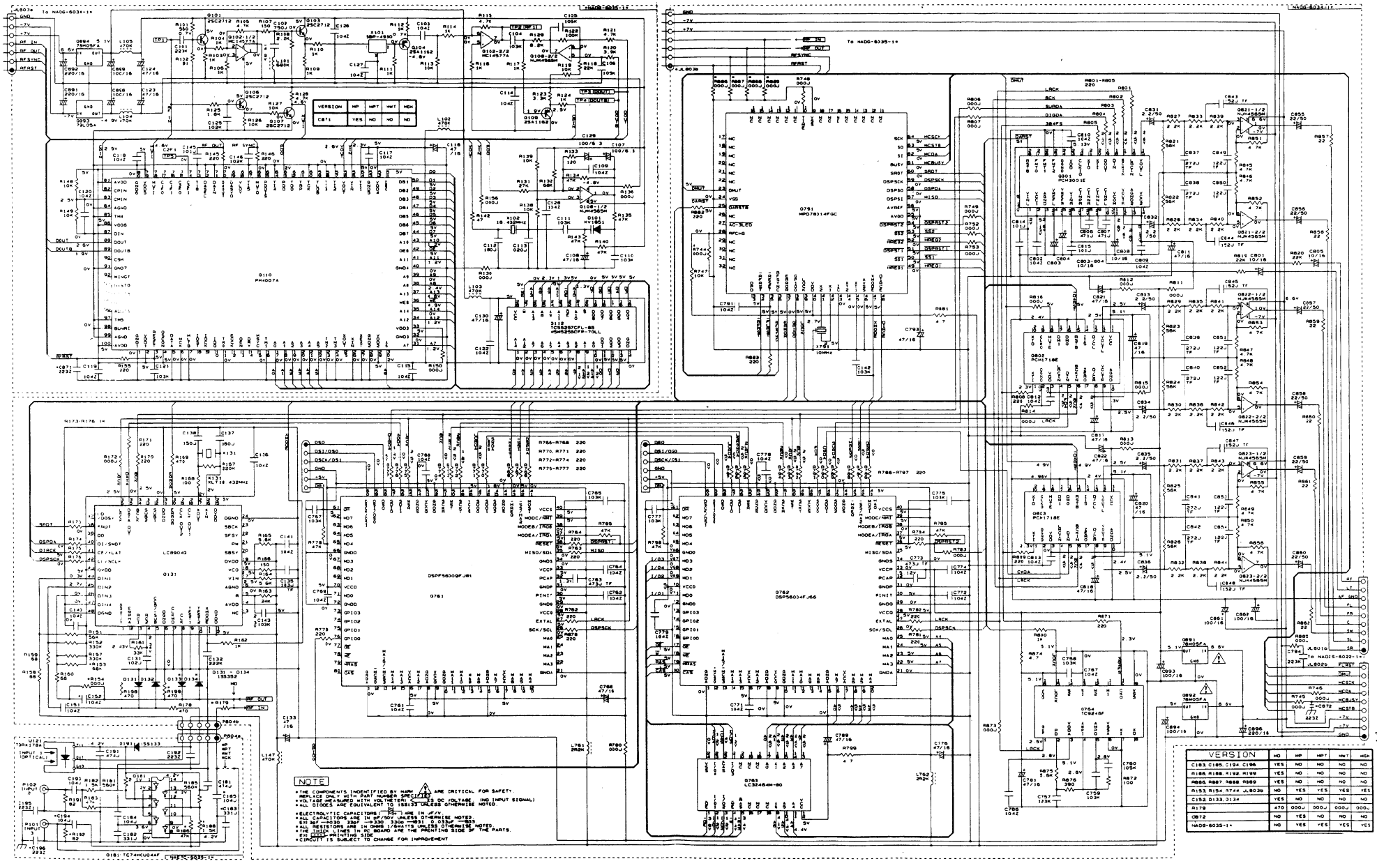
SCHEMATIC DIAGRAM



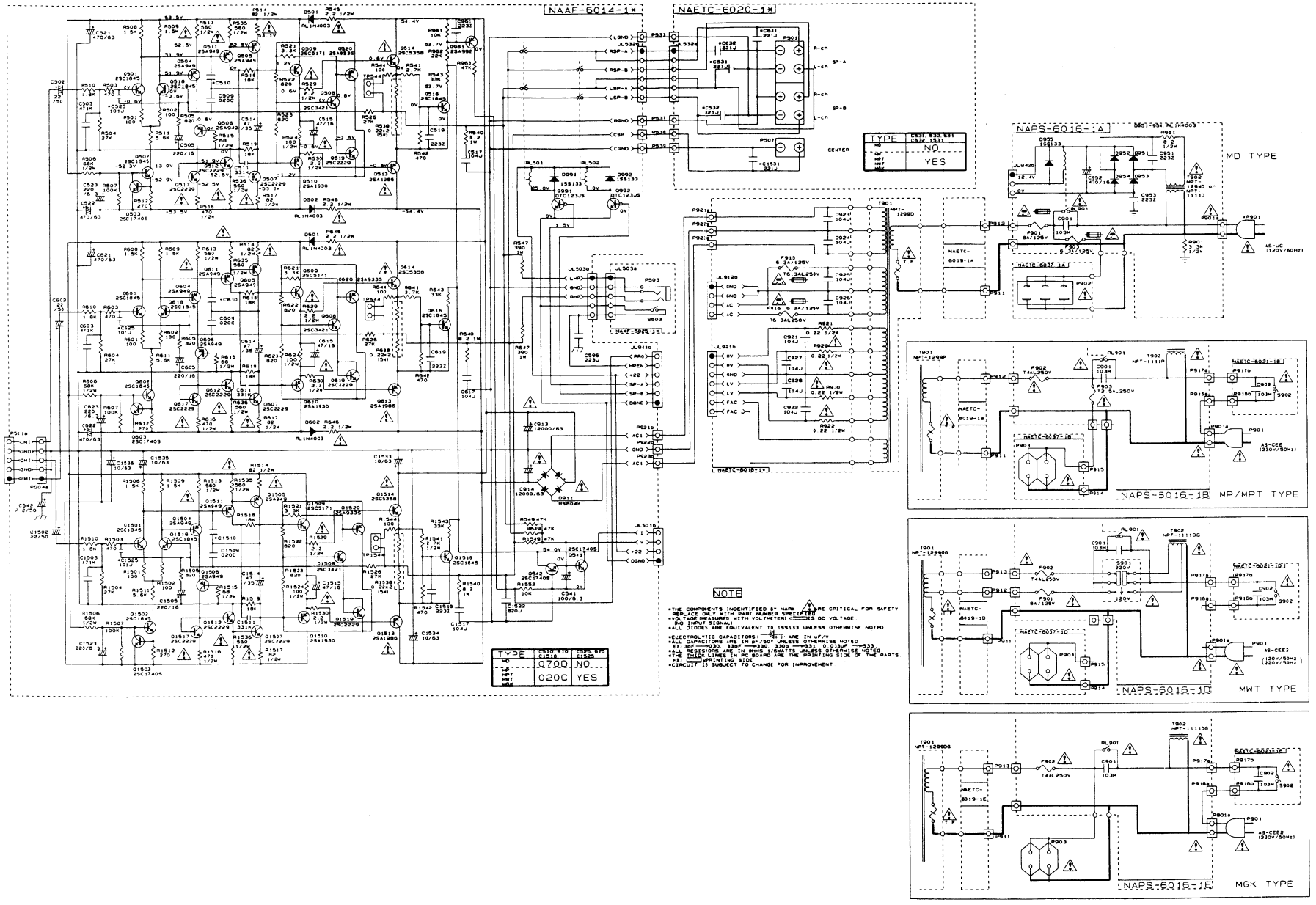
SCEMATIC DIAGRAM



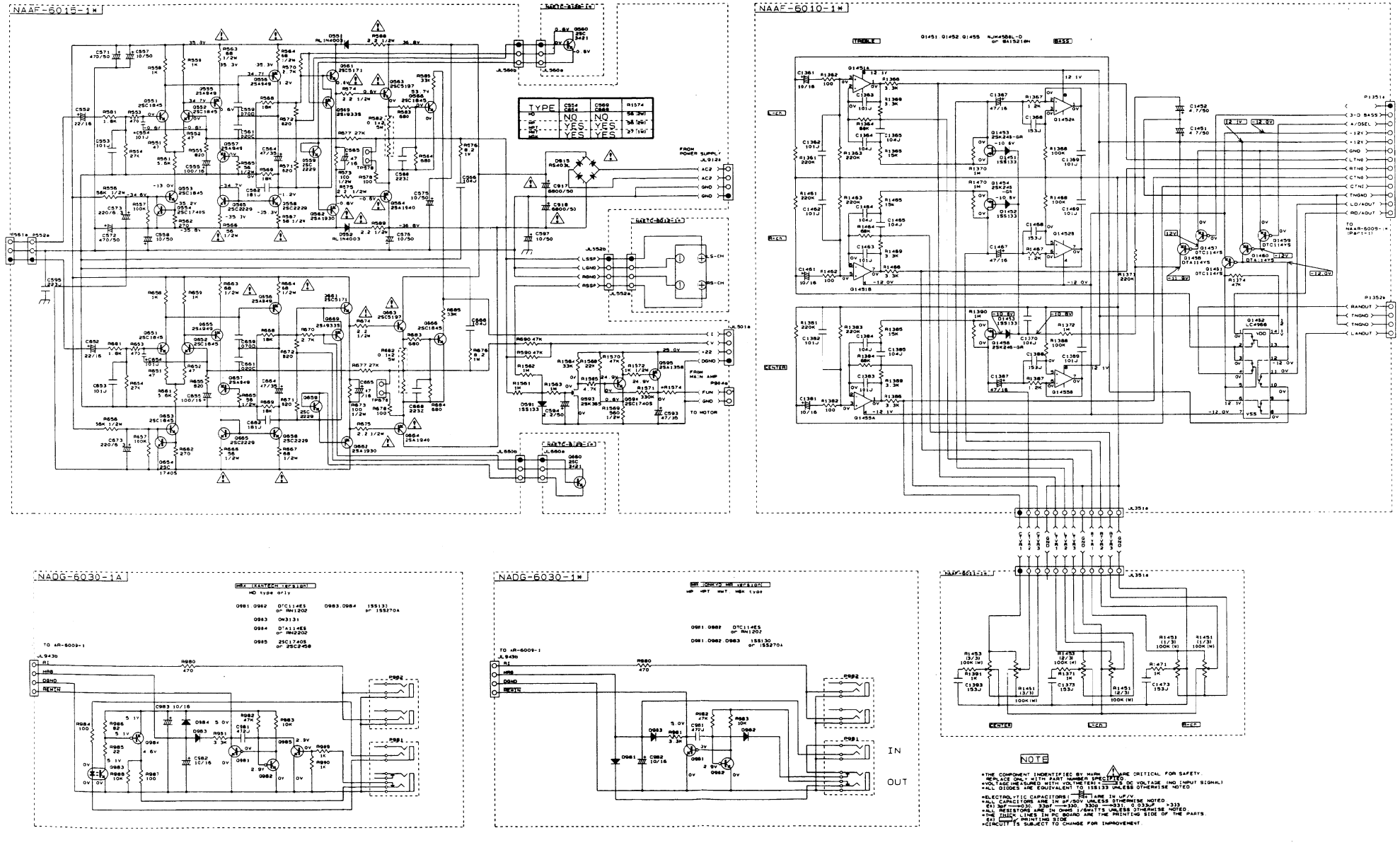
SCHEMATIC DIAGRAM



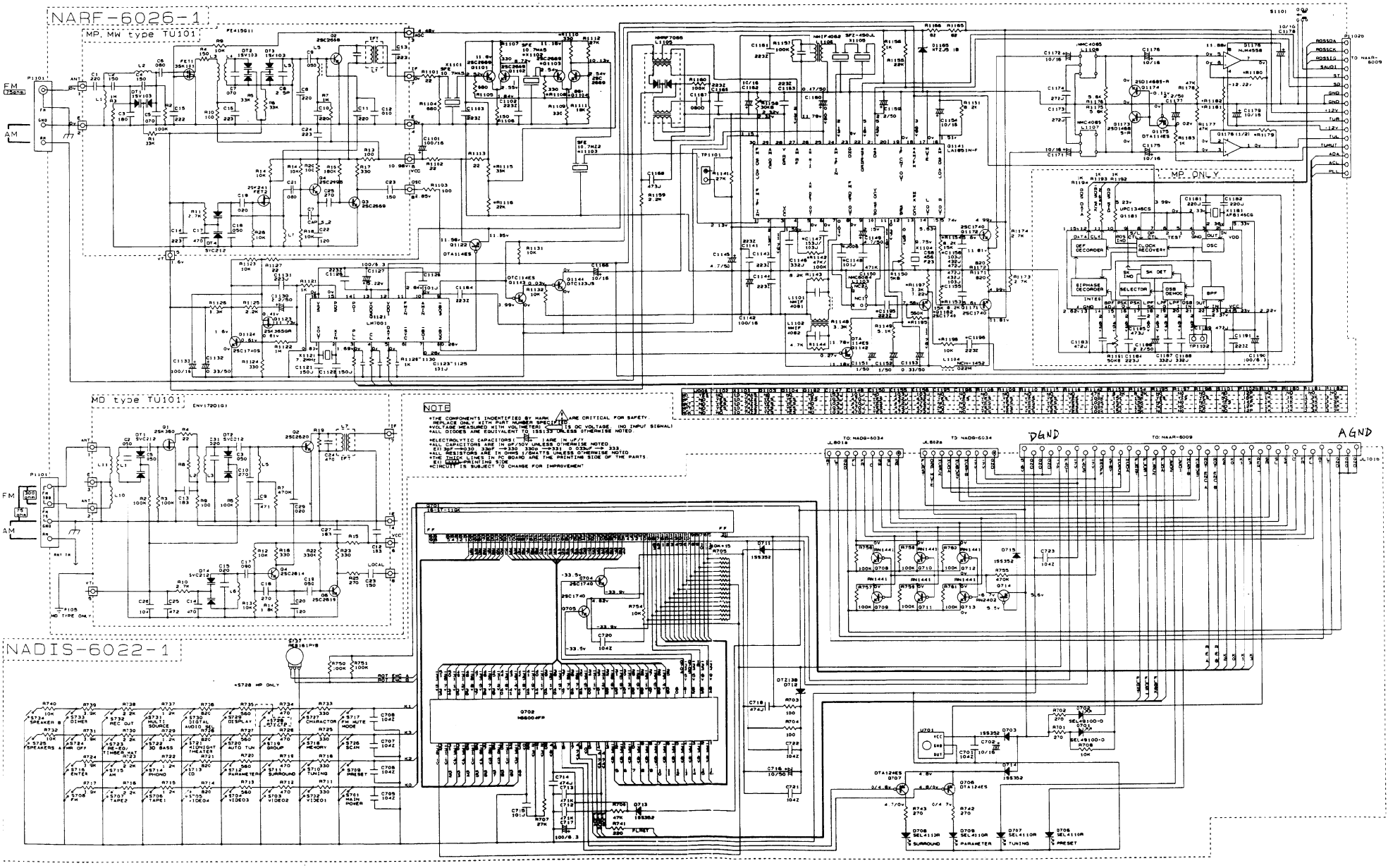
SCHEMATIC DIAGRAM



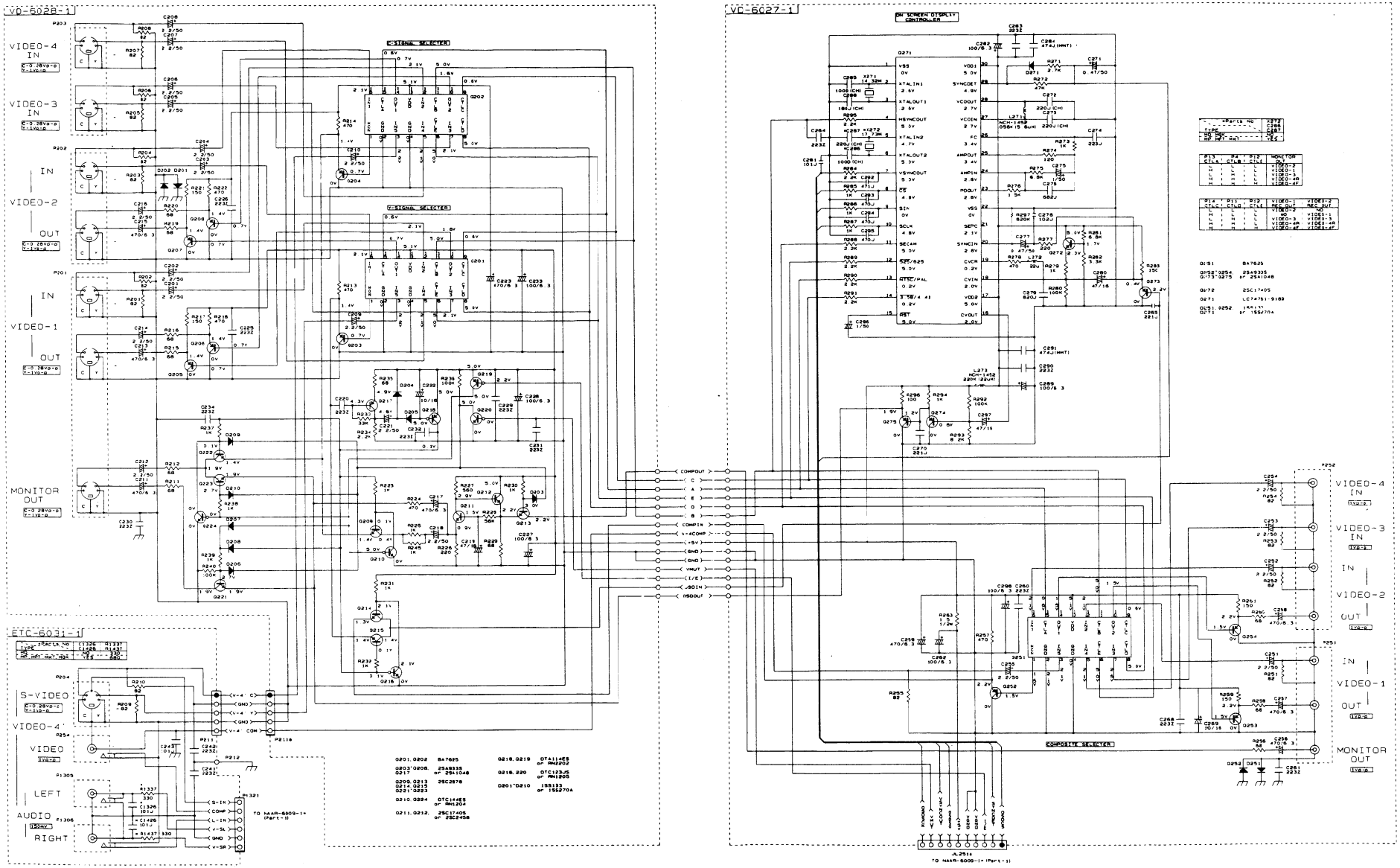
SCHEMTIC DIAGRAM



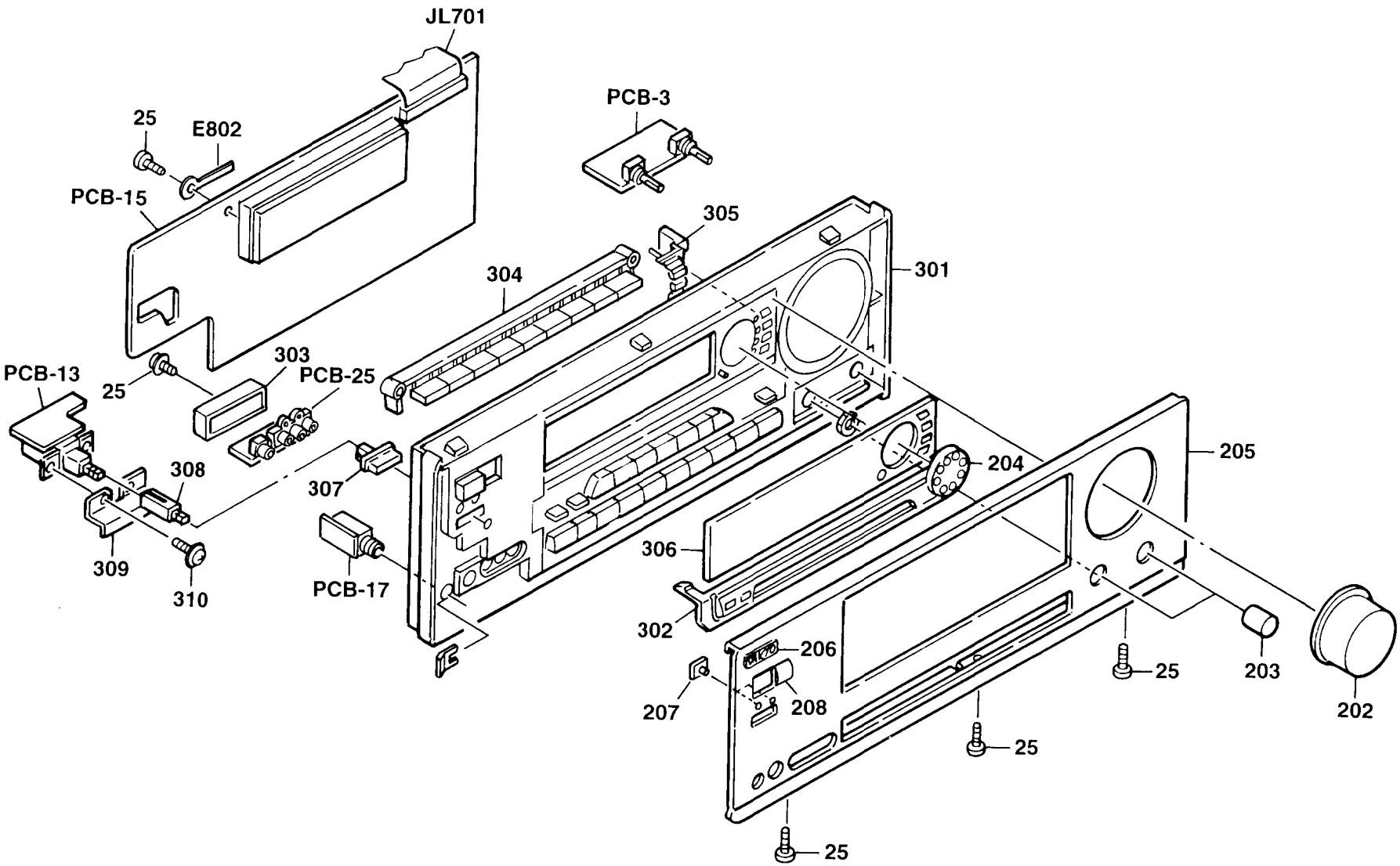
SCHEMATIC DIAGRAM

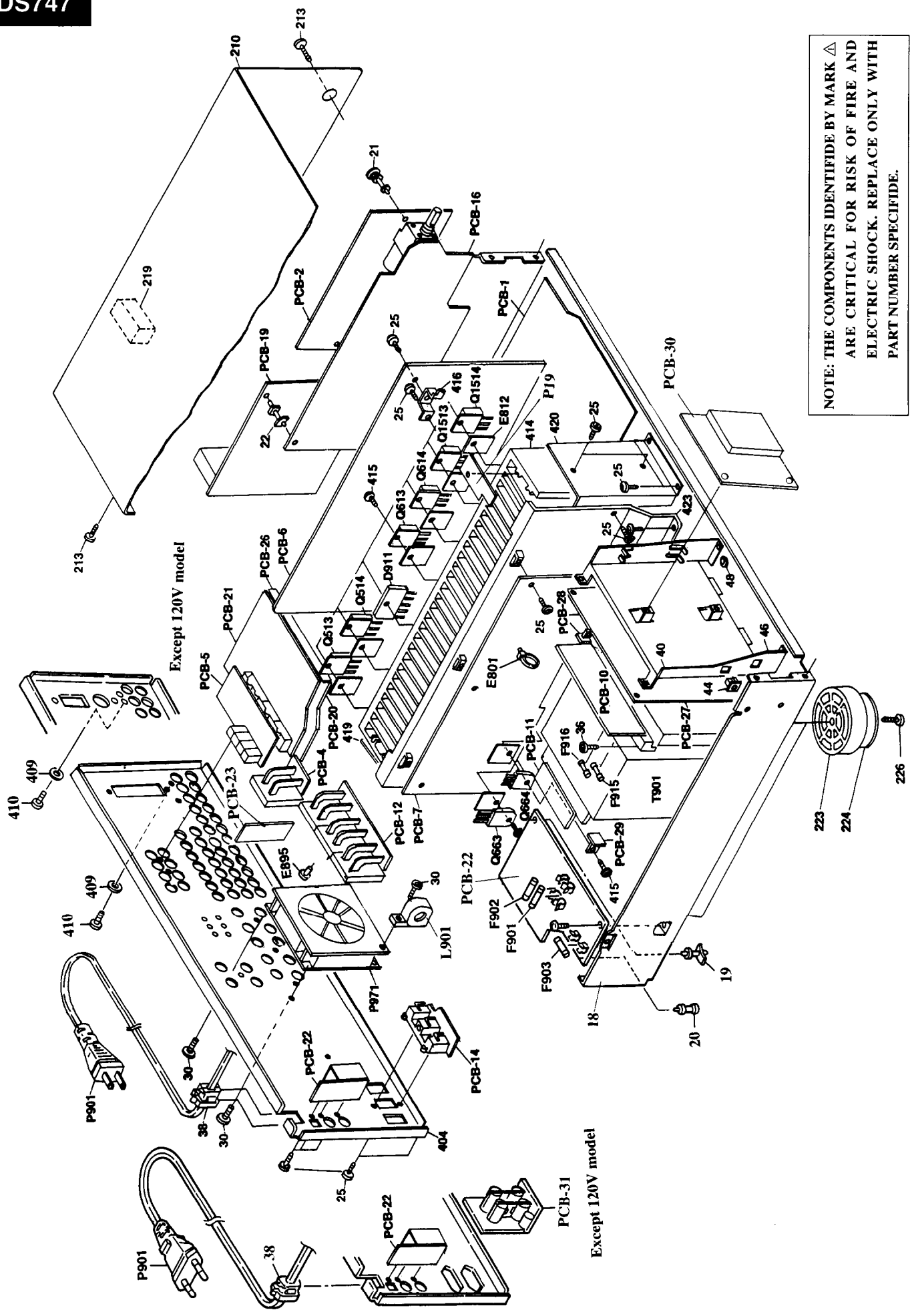


SCHEMATIC DIAGRAM



EXPLODED VIEW




NOTE: THE COMPONENTS IDENTIFIDE BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIDE.
Except 120V model
Except 120V model
PCB-1
PCB-2
PCB-4
PCB-5
PCB-6
PCB-7
PCB-10
PCB-11
PCB-12
PCB-14
PCB-16
PCB-19
PCB-20
PCB-21
PCB-22
PCB-23
PCB-26
PCB-27
PCB-28
PCB-29
PCB-30
PCB-31
PJ9
T901
L901
E801
E812
E895
F901
F902
F903
F915
F916
P901
P971
Q513
Q514
Q613
Q614
Q663
Q664
Q1513
Q1514
D911

EXPLODED VIEW-PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
18	27100328A	Chassis
19	27190503A	KGLS-8RF,Holder
20	27190428A	KGLS-10RF,Holder
21	27190772	KGLS-22RF,Holder
22	27190062	KGLS-12S,Holder
25	838130088	3TTB+8B,Self-tapping screw
30	838150108	5TTB+10B,Self-tapping screw
36	830440089	4TTC+8C(BC),Self-tapping screw
38	27300750	⚠ #2271, Bushing cord
40	27141684A	Retainer AC
44	27191016	GROMMT2315,Holder
46	27150408	Shield plate
48	27270374	Spacer
202	28325509	Knob, volume <B>
	28325511	Knob, volume <G>
203	28325405Y	Knob, tone <B>
	28325407Y	Knob, tone <G>
204	28325500Y	Knob, jog <B>
	28325502Y	Knob, jog <G>
205	27211917	Front panel <D>
	27211918	Front panel <P>
	27211920	Front panel <G>
	27211921	Front panel <BT/BW>
206	28135244Y	Badge <B>
	28135245Y	Badge <S>
207	28198778Y	Facet
208	28191738Y	Clear plate
210	28184683Y	Top cover <B>
	28184685Y	Top cover <G>
213	838430088	3TTB+8B(BC),Self-tapping screw <B>
	838230088	3TTB+8B(NI), Nickel screw <G>
219	28141235Y	t15x30x15, Cushion
223	27175319A	Leg
224	28141332Y	Cushion
226	831430088	3TTW+8B(BC), Self-tapping screw
301	27110997	Front bracket <B>
	27110999A	Front bracket <G>
302	27215276	Decorative frame <B>
	27215277	Decorative frame <G>
303	27191002Y	Holder
304	28325503	Knob, mode <B>
	28325505	Knob, mode <G>
305	28325506	Knob, tuning <D/BT/BW>
	28325508A	Knob, tuning <G>
	28325522	Knob, tuning <P>
306	28191782A	Clear plate <B>
	28191783	Clear plate <G>
307	28325497A	Knob, power <P/BT/BW>
	28325499A	Knob, power <G>
308	27273164Y	Joint <P/T/W/K>
309	27141686A	Reatiner, power <P/T/W/K>
310	838430107	3TTB+10S(BC),Self-tapping screw <P/T/W/K>

REF.NO.	PART NO.	DESCRIPTION
404	27122331Y	Rear panel <D>
	27122332Y	Rear panel <P>
	27122333Y	Rear panel <W>
	27122334Y	Rear panel <T>
	27122335Y	Rear panel <K>
409	87643010Y	W3X10F(BC),Washer
410	838230088Y	3TTB+8B(NI), Nickel screw
414	27160384Y	Radiator
415	801433	3SMS8W,SW+14B(BC),Special screw
416	27141681Y	Retainer
419	27141682Y	Retainer, rear
420	27141683Y	Retainer, front
423	27160385Y	Radiator S
D911	22380273	⚠ RS804M,Diode
E801	260208	Wire tie
E802	27255004	CS-1U, Clip
E803	27301779	Clamp
E812	223024	AC238, Isolation sheet
E895	880009	NRP-345,Plastic rivet <P/T/W/K>
F901	252198Y	⚠ 8A-UL/T-237,Fuse <D/W>
F902	252077	⚠ 4A-SE-EAK,Fuse <P/T/W/K>
F903	252166Y	⚠ 6.3A-UL/T-237,Fuse <D>
	252075	⚠ 2.5A-SE-EAK,Fuse <P/T/K>
F915,F916	252166Y	⚠ 6.3A-UL/T-237,Fuse <D>
	252079	⚠ 6.3A-SE-EAK,Fuse <P/T/W/K>
JL701	2047392012Y	NCFC7-392012,Flexible flat cable
L901	230910	⚠ ESD-R-25DB,Core
P19	25136063	NCETC-6063,Holder
P901	253244HIT	⚠ AS-UC-6#18,Power supply cord <D>
	253247WSE	⚠ AS-KS,Power supply cord <K>
	253245HIT	⚠ AS-CEE,Power supply cord <P/T>
	253246KAW	⚠ AS-CEE-2,Power supply cord <W>
P904	25051266	⚠ NSCT-2P1056, AC outlet <K>
P971	24502284Y	KD2409PTB2,Fan
PCB-1	1A739509-1AY	NAAR-6009-1A,Main circuit pc board <D>
	1A739509-1BY	NAAR-6009-1B,Main circuit pc board <P>
	1A739509-1CY	NAAR-6009-1C,Main circuit pc board <T>
	1A739509-1DY	NAAR-6009-1D,Main circuit pc board <W>
	1A739509-1EY	NAAR-6009-1E,Main circuit pc board <K>
PCB-2	1A739510-1AY	NAAF-6010-1A,Tone amplifier pc board ass'y <D>
	1A739510-1BY	NAAF-6010-1B,Tone amplifier pc board ass'y <P>
	1A739510-1CY	NAAF-6010-1C,Tone amplifier pc board ass'y <T>
	1A739510-1DY	NAAF-6010-1D,Tone amplifier pc board ass'y <W>
	1A739510-1EY	NAAF-6010-1E,Tone amplifier pc board ass'y <K>
PCB-3	1A739511-1AY	NAAF-6011-1A,Volume circuit pc board ass'y <D>
	1A739511-1BY	NAAF-6011-1B,Volume circuit pc board ass'y <P>
	1A739511-1CY	NAAF-6011-1C,Volume circuit pc board ass'y <T>
	1A739511-1DY	NAAF-6011-1D,Volume circuit pc board ass'y <W>
	1A739511-1EY	NAAF-6011-1E,Volume circuit pc board ass'y <K>
PCB-4	1A739512-1AY	NAETC-6012-1A,Surround speaker terminal pc board ass'y<D>
	1A739512-1BY	NAETC-6012-1B,Surround speaker terminal pc board ass'y<P>
	1A739512-1CY	NAETC-6012-1C,Surround speaker terminal pc board ass'y<T>
	1A739512-1DY	NAETC-6012-1D,Surround speaker terminal pc board ass'y<W>
	1A739512-1EY	NAETC-6012-1E,Surround speaker terminal pc board ass'y<K>

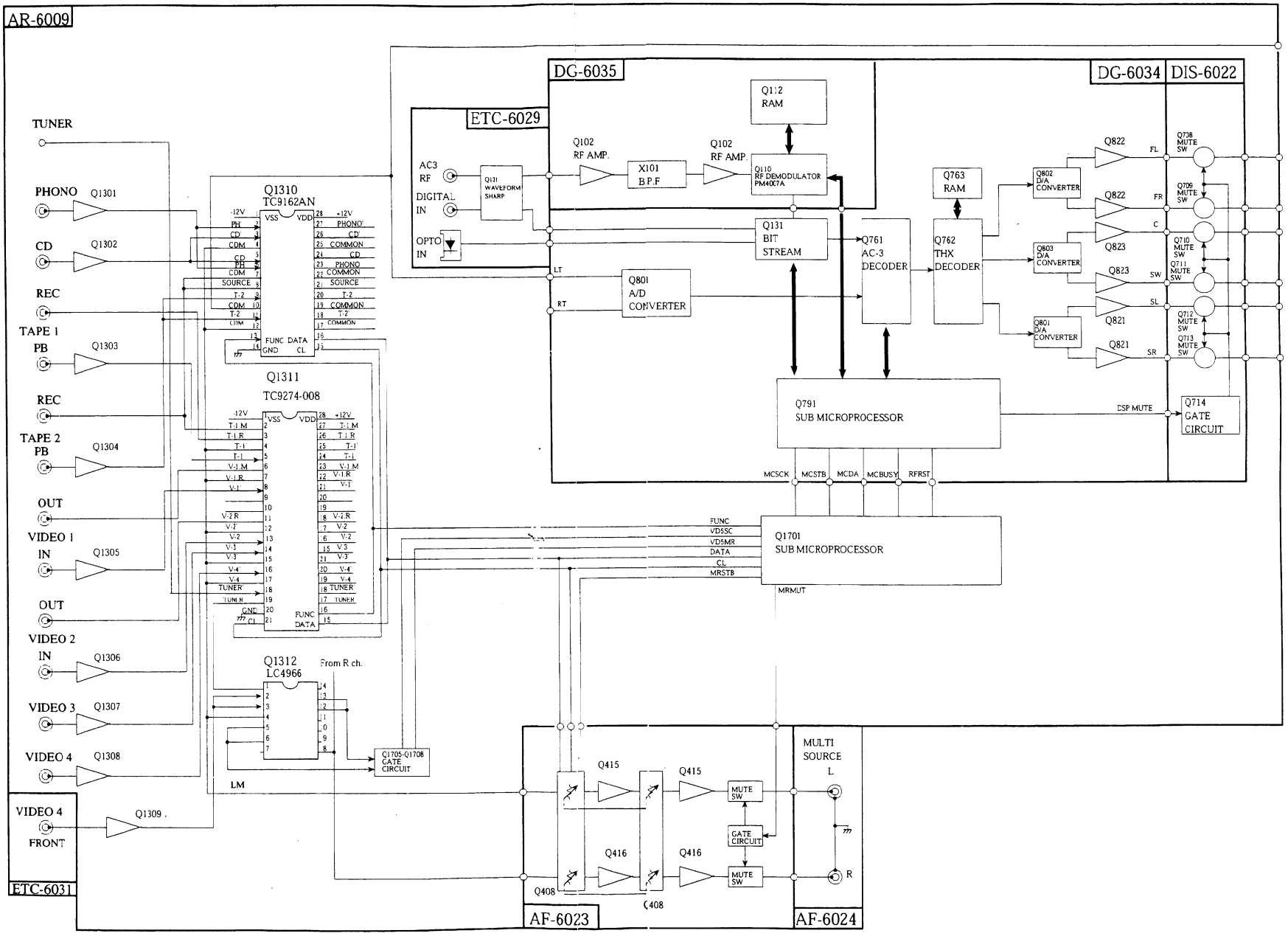
REF.NO.	PART NO.	DESCRIPTION
PCB-5	1A739524-1AY	NAAF-6024-1A,Pre. output pc board ass'y <D>
	1A739524-1BY	NAAF-6024-1B,Pre. output pc board ass'y <P>
	1A739524-1CY	NAAF-6024-1C,Pre. output pc board ass'y <T>
	1A739524-1DY	NAAF-6024-1D,Pre. output pc board ass'y <W>
	1A739524-1EY	NAAF-6024-1E,Pre. output pc board ass'y <K>
PCB-6	1A739514-1AY	NAAF-6014-1A,Front and center power amplifier pc board ass'y <D>
	1A739514-1BY	NAAF-6014-1B,Front and center power amplifier pc board ass'y <P/T>
	1A739514-1DY	NAAF-6014-1D,Front and center power amplifier pc board ass'y<W>
	1A739514-1EY	NAAF-6014-1E,Front and center power amplifier pc board ass'y<K>
PCB-7	1A739515-1AY	NAAF-6015-1A,Surround power amplifier pc board ass'y <D>
	1A739515-1BY	NAAF-6015-1B,Surround power amplifier pc board ass'y <P/T>
	1A739515-1DY	NAAF-6015-1D,Surround power amplifier pc board ass'y <W>
	1A739515-1EY	NAAF-6015-1E,Surround power amplifier pc board ass'y <K>
PCB-8	1A739516-1AY	NAPS-6016-1A,Power supply circuit pc board ass`y <D>
	1A739516-1BY	NAPS-6016-1B,Power supply circuit pc board ass`y <P/T>
	1A739516-1DY	NAPS-6016-1D,Power supply circuit pc board ass`y <W>
	1A739516-1EY	NAPS-6016-1E,Power supply circuit pc board ass`y <K>
PCB-10	1A739518-1AY	NAETC-6018-1A,Secondary circuit pc board ass'y <D>
	1A739518-1BY	NAETC-6018-1B,Secondary circuit pc board ass'y <P/T>
	1A739518-1DY	NAETC-6018-1D,Secondary circuit pc board ass'y <W>
	1A739518-1EY	NAETC-6018-1E,Secondary circuit pc board ass'y <K>
PCB-11	1A739519-1AY	NAETC-6019-1A,Terminal pc board ass'y <D>
	1A739519-1BY	NAETC-6019-1B,Terminal pc board ass'y <P/T>
	1A739519-1DY	NAETC-6019-1D,Terminal pc board ass'y <W>
	1A739519-1EY	NAETC-6019-1E,Terminal pc board ass'y <K>
PCB-12	1A739520-1AY	NAETC-6020-1A,Speaker terminal pc board ass'y <D>
	1A739520-1BY	NAETC-6020-1B,Speaker terminal pc board ass'y <P/T>
	1A739520-1DY	NAETC-6020-1D,Speaker terminal pc board ass'y <W>
	1A739520-1EY	NAETC-6020-1E,Speaker terminal pc board ass'y <K>
PCB-13	1A739521-1BY	NCETC-6021-1B,Power switch pc board ass'y <P/T>
	1A739521-1DY	NCETC-6021-1D,Power switch pc board ass'y <W>
	1A739521-1EY	NCETC-6021-1E,Power switch pc board ass'y <K>
PCB-14	1A739537-1AY	NCETC-6037-1A,AC outlet terminal pc board ass'y <D>
PCB-15	1A739522-1AY	NADIS-6022-1A,Display circuit pc board ass'y <D>
	1A739522-1BY	NADIS-6022-1B,Display circuit pc board ass'y <P>
	1A739522-1CY	NADIS-6022-1C, Display circuit pc board ass'y <T/W/K>
PCB-16	1A739523-1AY	NAAF-6023-1A,Electronic volume pc board ass'y <D>
	1A739523-1BY	NAAF-6023-1B,Electronic volume pc board ass'y <P>
	1A739523-1CY	NAAF-6023-1C,Electronic volume pc board ass'y <T/W/K>
PCB-17	1A739525-1AY	NAAF-6025-1A,Headphone terminal pc board ass'y <D>
	1A739525-1BY	NAAF-6025-1B,Headphone terminal pc board ass'y <P>
	1A739525-1CY	NAAF-6025-1C,Headphone terminal pc board ass'y <T/W/K>
PCB-19	1A739526-1AY	NARF-6026-1A,Tuner circuit pc board <D>
	1A739526-1BY	NARF-6026-1B,Tuner circuit pc board <P>
	1A739526-1CY	NARF-6026-1C,Tuner circuit pc board <T>
	1A739526-1DY	NARF-6026-1D,Tuner circuit pc board <W>
	1A739526-1EY	NARF-6026-1E,Tuner circuit pc board <K>
PCB-20	1A739527-1AY	NAVD-6027-1A,Video circuit pc board ass'y <D>
	1A739527-1BY	NAVD-6027-1B,Video circuit pc board ass'y <P>
	1A739527-1CY	NAVD-6027-1C,Video circuit pc board ass'y <T>
	1A739527-1DY	NAVD-6027-1D,Video circuit pc board ass'y <W>
	1A739527-1EY	NAVD-6027-1E,Video circuit pc board ass'y <K>

REF.NO.	PART NO.	DESCRIPTION
PCB-21	1A739528-1AY	NAVD-6028-1A,S video circuit pc board ass'y <D>
	1A739528-1BY	NAVD-6028-1B,S video circuit pc board ass'y <P>
	1A739528-1CY	NAVD-6028-1C,S video circuit pc board ass'y <T>
	1A739528-1DY	NAVD-6028-1D,S video circuit pc board ass'y <W>
	1A739528-1EY	NAVD-6028-1E,S video circuit pc board ass'y <K>
PCB-22	1A739529-1AY	NAETC-6029-1A,Digital input terminal pc board ass'y <D>
	1A739529-1BY	NAETC-6029-1B,Digital input terminal pc board ass'y <P>
	1A739529-1CY	NAETC-6029-1C,Digital input terminal pc board ass'y <T>
	1A739529-1DY	NAETC-6029-1D,Digital input terminal pc board ass'y <W>
	1A739529-1EY	NAETC-6029-1E,Digital input terminal pc board ass'y <K>
PCB-23	1A739530-1AY	NADG-6030-1A,RI/MR terminal pc board ass'y <D>
	1A739530-1BY	NADG-6030-1B,RI/MR terminal pc board ass'y <P>
	1A739530-1CY	NADG-6030-1C,RI/MR terminal pc board ass'y <T>
	1A739530-1DY	NADG-6030-1D,RI/MR terminal pc board ass'y <W>
	1A739530-1EY	NADG-6030-1E,RI/MR terminal pc board ass'y <K>
PCB-25	1A739531-1AY	NAETC-6031-1A,Front terminal pc board ass'y <D>
	1A739531-1BY	NAETC-6031-1B,Front terminal pc board ass'y <P>
	1A739531-1CY	NAETC-6031-1C,Front terminal pc board ass'y <T>
	1A739531-1DY	NAETC-6031-1D,Front terminal pc board ass'y <W>
	1A739531-1EY	NAETC-6031-1E,Front terminal pc board ass'y <K>
PCB-26	1A739533-1AY	NAETC-6033-1A,Terminal pc board ass'y <D>
	1A739533-1BY	NAETC-6033-1B,Terminal pc board ass'y <P>
	1A739533-1CY	NAETC-6033-1C,Terminal pc board ass'y <T>
	1A739533-1DY	NAETC-6033-1D,Terminal pc board ass'y <W>
	1A739533-1EY	NAETC-6033-1E,Terminal pc board ass'y <K>
PCB-27	1A739534-1AY	NADG-6034-1A, DSP circuit pc board ass'y <T/W/K>
	1A739534-1BY	NADG-6034-1B, DSP circuit pc board ass'y <D>
	1A739534-1CY	NADG-6034-1C, DSP circuit pc board ass'y <P>
PCB-28	1A739128-1AY	NAETC-6128-1A,Thermal det. pc board ass'y <D>
	1A739128-1BY	NAETC-6128-1B,Thermal det. pc board ass'y <P/T>
	1A739128-1DY	NAETC-6128-1D,Thermal det. pc board ass'y <W>
	1A739128-1EY	NAETC-6128-1E,Thermal det. pc board ass'y <K>
PCB-29	1A739129-1AY	NAETC-6129-1A,Thermal det. pc board ass'y <D>
	1A739129-1BY	NAETC-6129-1B,Thermal det. pc board ass'y <P/T>
	1A739129-1DY	NAETC-6129-1D,Thermal det. pc board ass'y <W>
	1A739129-1EY	NAETC-6129-1E,Thermal det. pc board ass'y <K>
PCB-30	1A739535-1BY	NADG-6035-1B,AC-3 circuit pc board ass'y <P>
	1A739535-1CY	NADG-6035-1A,AC-3 circuit pc board ass'y <T/W/K>
PCB-31	1A739517-1BY	NCETC-6017-1B,AC outlet terminal pc board ass'y <P/T>
	1A739517-1DY	NCETC-6017-1D,AC outlet terminal pc board ass'y <W>
Q1508	2212654 or	* 2SC3421-Y or
Q508,Q608	2212653	* 2SC3421-O,Transistor
Q1513	2203113 or	* 2SA1986-O or
Q513,Q613	2203112	* 2SA1986-R,Transistor
Q1514	2203123 or	* 2SC5358-O or
Q514,Q614	2203122	* 2SC5358-R,Transistor
Q563,Q663	2203043 or	* 2SC5197-O or
	2203042	* 2SC5197-R,Transistor
Q564,Q664	2203033 or	* 2SA1940-O or
	2203032	* 2SA1940-R,Transistor
T901	2301267Y	⚠ NPT-1299D,Power transformer <D>
	2301268Y	⚠ NPT-1299P,Power transformer <P/T>
	2301269Y	⚠ NPT-1299DG,Power transformer <W/K>

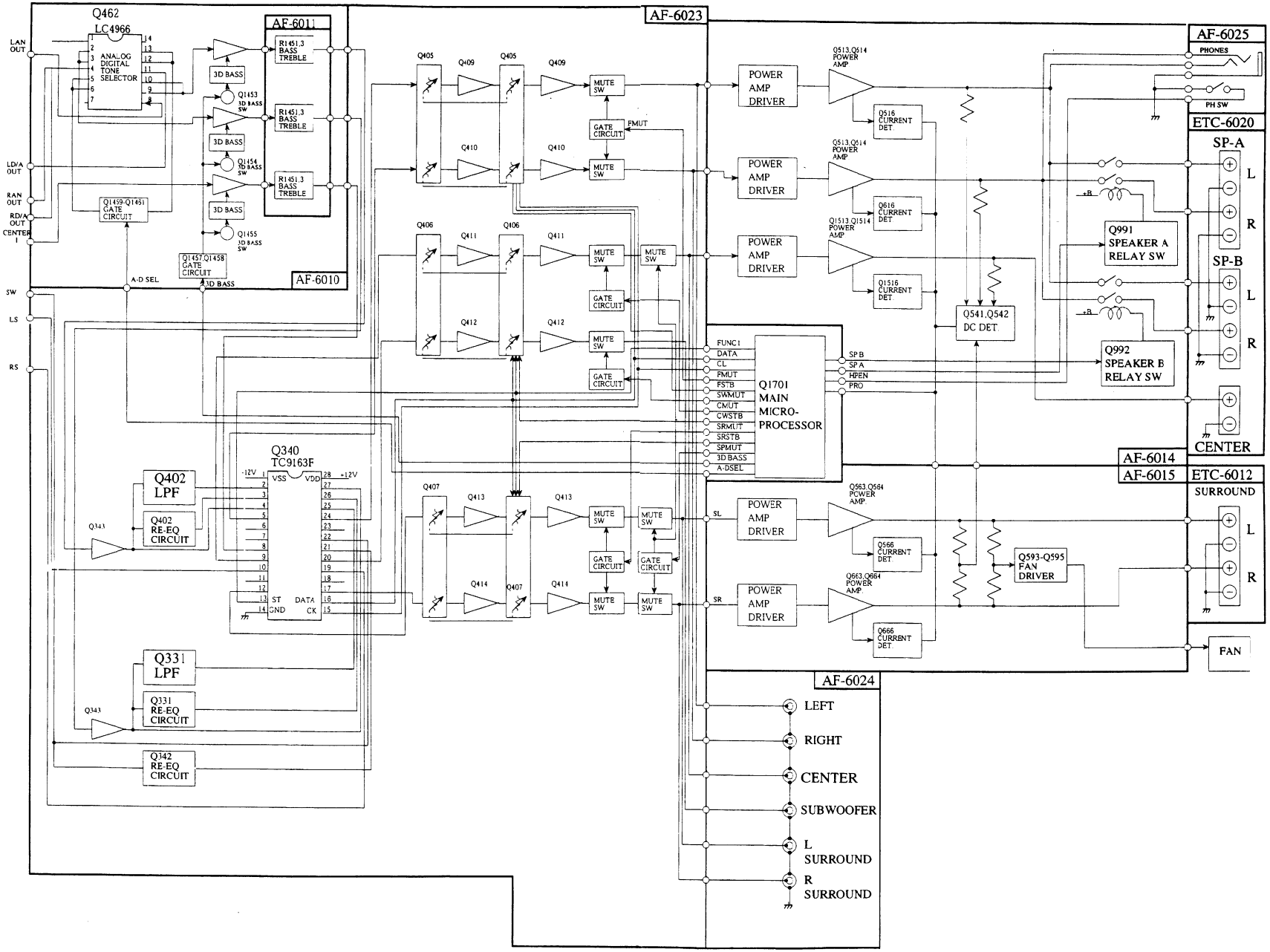
NOTE:

<D>:120V Model only
<P>:230V Model only
<T>:Asian Model only
<W>:Worldwide Model only
<K>:Korean Model only
<B>:Black Model only
<G>:Golden Model only

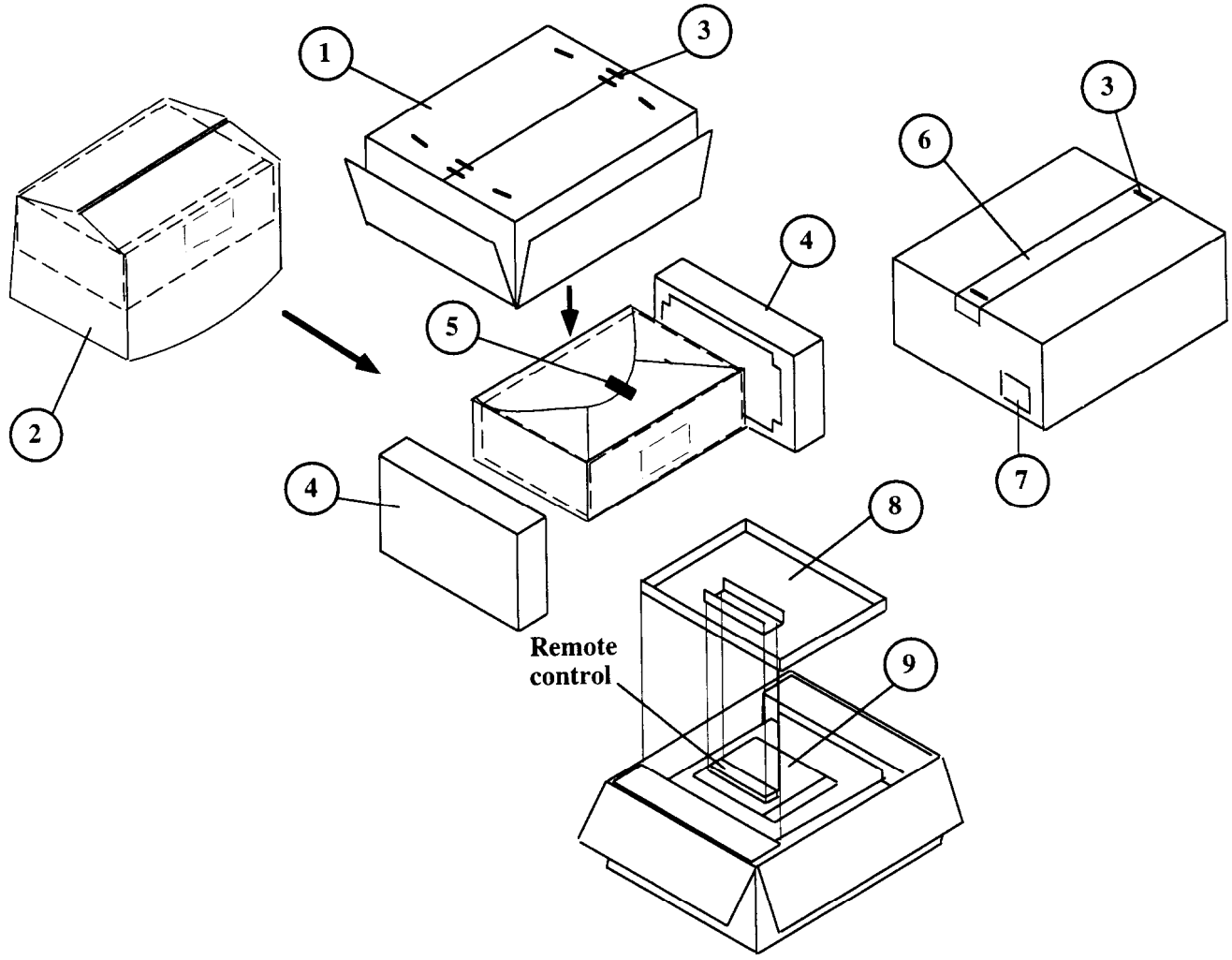
BLOCK DIAGRAMS



BLOCK DIAGRAMS



PACKING VIEW



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
1	29053154Y	Carton box <D>
	29053155Y	Carton box <P>
	29053157Y	Carton box <BT/BW>
	29053158Y	Carton box <G>
2	29100034-1AY	850X650, Poly bag
3	282301Y	Staple
4	29091777Y	Pad asembly
5	261504Y	W=30,Paper tape
6	29110071Y	W=50, PP tape
7	29362142Y	Label UPC <D>
	29362143Y	Label EAN <P/T/W>
	29362144Y	Label EAN <G>
8	29095802	Sheet

REF. NO.	PART NO.	DESCRIPTION
9	Accessary bag ass'y	
	3010054	UM-3, Battery
	25065462	YAE21-0237,FM adaptor <W/K>
	232140	NMA-3057,AM loop antenna
	24140036	RC-P101S,Remote control <D>
	24140037	RC-P201S,Remote control <P/T/W/K>
	25055018	CV-K-1,Conversion plug <W>
	29100097-1AY	350X250, Poly bag
	292111	FM antenna <D>
	292112	FM antenna <P/T/W/K>
	29342353	U8(RC-P101S),Instruction manual
	29342438AY	Instruction manual E
	29342439Y	Instruction manual FSI <P>
	29342440Y	Instruction manual GSwD <P>
	29342441Y	Instruction manual T <T/W>
	29355221Y	Instruction sheet
	29358002K	SS list <D>
	29365019B	Warranty card <D>

NOTE:
<D>:120V Model only
<P>:230V Model only
<T>:Asian Model only
<W>:Worldwide Model only
<K>:Korean Model only
<B>:Black Model only
<G>:Golden Model only

ONKYO CORPORATION

International Sales Div.: 31 Sankyo-bild. 3-8-5, Asakusabashi, Taito-ku, TOKYO 111, JAPAN
TEL : 03-5820-5865 FAX : 03-5820-5869

ONKYO U.S.A. CORPORATION
200 Williams Drive, Ramsey, N.J. 07446, U.S.A.
TEL : 201-825-7950 FAX : 201-825-8150

ONKYO EUROPE ELECTRONICS GmbH
Industriestrasse 18-20, 82110 Germering, GERMANY
TEL : 089 84 93 20 FAX : 089 84 93 226

ONKYO FRANCE
Immeuble Le Diamant, Domaine Technologique de Saclay, 4 Rue Rene Razel, 91892 SACLAY, FRANCE
TEL : (1) 69 33 1400 FAX : (1) 69 41 35 84

NS709 PN 0M3587 Printed in Japan